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by

DMYTRO REWILAK

(C)

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This work is dedicated to Myrosia, my wife, Evhen and Andriy, my two sons, and my parents. It is also dedicated to all those persons, who were instrumental in educating my mind and instilling in me a love for knowledge.

Abstract

The present study investigated the relationship between a depressive self-schema and cognitive distortion predicted from Beck's model of adult depression. In addition, potential differences between first episode depressives (FED) and repeated episode depressives (RED) in terms of their self-schema and tendency to distort their experiences were also investigated. Subjects were 42 depressed inpatients in the psychiatric section of a general hospital and 42 nondepressed hospital employees. They were compared on their recall and recognition of depressed content versus nondepressed content adjectives, utilized as a self-schema measure in a depth of processing paradigm. In addition, they were compared on their scores on a Cognitive Errors Questionnaire, a measure of cognitive distortion. Among the most significant findings of the study was the important role of a nondepressive self-schema. In this regard, results revealed that the structural component of the self of nondepressives was characterized exclusively by nondepressed content. By contrast, the self of depressives appeared to contain both depressive and nondepressive features. In terms of cognitive distortion, although depressives showed a significantly stronger tendency to commit cognitive errors compared with nondepressives, again it was the operation of a nondepressive self-schema which seemed to exert a significant influence on the propensity for cognitive distortion. Finally, no statistically

significant differences were found between FED's and RED's in terms of depressive self-schema and cognitive distortion, although results were in the predicted direction. It was concluded that, in general, results of this study offered only indirect evidence in support of Beck's model. In conclusion, attention was drawn primarily to the implications of the present results for Beck's theory and clinical practice.

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CHAPTER 1

Introduction

Two areas of contemporary theorizing and research in psychology are of relevance to the present work. The first involves the increased acceptance in recent years of cognitive factors as areas of legitimate scientific inquiry. This trend has been so pronounced that it has been referred to as the cognitive revolution in psychology (Dember, 1974).

Bandura (1969) was among the forerunners, who questioned the applicability of radical behavioural accounts to all psychological phenomena, and concluded recently that "most external influences affect behavior through intermediary cognitive processes" (Bandura, 1978, p.345). These cognitive processes play a role in determining which features of the environment will be attended to and how they will be perceived, and how the individual will organize the information conveyed by the environment for future use.

Paralleling the above emphasis on cognitive, internal processes, and perhaps largely as a result of it, has been a revitalized interest in the self. In a stimulating proposition Epstein (1973) redefined the self-concept as a self-theory, meaning that "individuals have implicit theories about themselves as functioning individuals" (p.415). In addition to playing a crucial role in the optimization of the pleasure/pain balance of the individual over the course of a lifetime, the self-theory serves two other important functions. The first is concerned with the

facilitation and maintenance of self-esteem, while the second is involved in the organization of experiential data in a manner which permits effective coping.

The contention that the self-theory organizes and structures experience bears a striking resemblance to the role of schemata in memory (e.g., Bartlett, 1932). Indeed, Kuiper and Derry (1980) view the self as a cognitive schema which governs the processing of personal and social information about one's self and others. In this view, both the content and the function of this schema define the self. In terms of content the self-schema represents a hierarchically organized body of knowledge stored in long term memory. As Mancuso and Ceely (1980) point out, this body of knowledge constitutes a system of self-representation involving both generic and episodic memory structures that possess a number of organizational properties relevant to an understanding of consistency and variability in a person's enactment of self-relevant behaviour. In terms of function the self-schema, as any other schema, is thought to interact with incoming data so as to organize the processing and retention of self-related infomation.

Returning to the cognitive revolution in psychology, we note that, just as traditional behaviourism laid the foundation for the development of behaviour therapy, so too has the new look, cognitivized behaviourism facilitated the emergence of what is called cognitive behaviour therapy.

The therapies subsumed under this rubric are based primarily on cognitive restructuring techniques. Making the central assumption that emotional disorders are the result of disturbed or maladaptive thought patterns, these therapeutic modalities are directed at modifying or restructuring these faulty cognitions. The most prominent representatives of a cognitive behavioural approach to emotional disturbances generally are Beck's (1976) cognitive therapy, Ellis' (1973) rational-emotive therapy and Meichenbaum's (1977) cognitive behaviour modification.

In terms of therapies for specific emotional disorders, notably depression, approaches emphasizing cognitive processes have again assumed a central position in contemporary theorizing about the nature of that disorder. They include Beck's cognitive model of adult depression (Beck, Rush, Shaw & Emery, 1979) and Seligman's (1975) learned helplessness theory of depression. It is Beck's cognitive model of depression that has been selected for scrutiny in the present work, as it epitomizes and integrates the two contemporary trends in psychology outlined above.

Consistent with the recent emphasis on cognitive factors in psychology generally, the central tenet of Beck's model is the view of depression as essentially a thinking disorder. Elaborating on the proposition that specific cognitions give rise to particular emotional expressions, Beck (1976) describes the cognitive triad which

characterizes the content of the depressed individual's thinking. The cognitive triad is the collective name given to specific thoughts revolving around a negative view of self, the environment and the future. In terms of the actual thinking process of depressed persons, Beck specifies a series of cognitive errors, or idiosyncratic cognitive distortions. Among these are such errors of thinking as arbitrary inference, selective abstraction, overgeneralization and magnification or minimization. The net result of these errors is a consistent misinterpretation of reality by the depressed individual.

While the negative content of thought of depressives and their errors of thinking leading to misinterpretations of their experiences are important elements of Beck's cognitive model of depression, the most crucial component of the model is the hypothetical construct of schemata. These schemata are thought of as cognitive structures which function to shape the content of thought of depressed individuals. In addition, they are also responsible for activating the cognitive errors, or distortions.

Although Beck's model does not possess an explicit account of a self that operates in instances of depression, it is obvious that his conceptualizations of the role of schemata in depression converge strongly on the contemporary views of self outlined above (Epstein, 1973; Kuiper & Derry, 1980; Mancuso & Ceely, 1980). More specifically, it would appear that the self operating in depression functions

primarily as a regulator and organizer of incoming personal information, facilitating its processing and retention. In this sense, therefore, it is reasonable to speak of a depressive self-schema.

The Problem

Although first proposed in the early 1960's, Beck's cognitive model of depression has, for a long time, relied heavily on Beck's clinical observations, with no systematic studies aimed directly at testing the validity of Beck's conceptualizations. Recently, a number of investigators have explored Beck's assertion that depressed individuals show faulty information processing reflected by errors of logic (e.g., Hammen & Krantz, 1976; Lefebvre, 1981). Emphasizing a different aspect of Beck's model is the work of Davis and associates (Davis, 1979 a, 1979 b; Davis & Unruh, 1981) focusing on self-reference in depression as being representative of a depressive self-schema. To date, however, the hypothesized relationship between a depressive self-schema and propensity to engage in cognitive errors has not been investigated.

Study Objectives

The primary objective of the present study is to provide a test of Beck's assertion of schema-mediated cognitive distortion in depression through the assessment of the strength of the association between a depressive self-schema and cognitive errors. Of additional importance is the investigation of possible differences in depressive

self-schema between first episode depressives and repeated episode depressives, given Beck's contention that depressive schemata should most plausibly be considered a relatively enduring anomaly in the depressive's psychological system. Again, this component of Beck's model of depression has not been evaluated. Finally, in examining the above aspects of Beck's model, comparisons will be possible between results of this study and data from previous research on depressive self-schema and cognitive distortion.

Study Implications

The most obvious implications of the present study are in terms of possible further validation of Beck's cognitive model of depression through the investigation of particular aspects of the model as outlined above. Furthermore, as a memory paradigm, that of depth of processing (Craik & Lockhart, 1972), is utilized in order to measure a depressive self-schema, results are of relevance to memory functioning in depression. Finally, potential implications for a view of self in depression are anticipated.

What follows in Chapter 2 is a selected overview of the area of depression generally. The purpose of this is to caution the reader that the model of depression selected for scrutiny in the present investigation forms but the tip of a vast iceberg of literature on depression. Chapter 3 will deal more specifically with Beck's approach to depression, drawing attention to empirical evidence in support of the

model and elucidating more specifically the parameters of the present study.

CHAPTER 2

Review of Literature: 1

In reviewing the literature on depression, the most prominent characteristic that emerges is the striking variety of different theoretical accounts and etiological explanations, confusing and often overlapping terminology, and diverse research emphases, resulting in definitional chaos and a general lack of agreement as to what constitutes depression. Thus, repeated attempts at arriving at a clear picture of what depression is are met with failure and disappointment, and could easily produce the state of "learned helplessness" in a vulnerable individual. What follows is the author's attempt to sort through the voluminous body of literature on depression, highlighting selected issues and debates.

The scope of the term "depression," its semantics, will serve as the point of departure. Of relevance here will be a consideration of depression as basically a normal affect serving an adaptive function, a discussion of depression as a symptom, and an illustration of depression as a syndrome and clinical entity. Attention will next be drawn to the extreme heterogeneity of depressive phenomena and will focus primarily on various classifications that have, and continue to abound in clinical practice and research. Finally, a brief overview of some of the major theories of depression will be offered in concluding the present chapter.

The Term Depression

Depression as Normal Affect

There continues to be considerable debate regarding the relationship of depression as a clinical entity to the changes in mood experienced by normal individuals. As Klerman (1974) notes, there has been a revival of the debate between the views of depression as an illness, as in the 19th century tradition of disease entities, and depression as a reaction to life events, as formulated in the Meyerian framework.

The former view is a revival of Kraepelin's (1921) emphasis on the biological causation of mental disease. Accordingly, depression is considered a well-defined disease, quite distinct from normal mood. This concept of a dichotomy between health and disease is generally favoured by the neo-Kraepelinian writers, who attempt to integrate the findings from genetics and neuropharmacology in offering an integrated account of the cause of depression. In sharp contrast to this view is the emphasis upon environmental factors, stemming from the psychobiological school. Reacting against the rigid biological view of mental illness, Meyer (1948) emphasized the individual's life experiences, personality and emotions, and viewed psychiatric disorders, generally, as an individual's specific reactions to a succession of life events. It was Meyer, in fact, who suggested in 1904 that the disorder, previously known as melancholia, be called depression

(Bemporad, 1978). Regarding the relationship of depression to normal mood, the Meyerian view is basically a unitary one, emphasizing the common features among various depressive episodes and stressing the continuity between normal and disease states. In this view, there is a continuous series of mood reactions ranging from a normal reaction to an extreme reaction in a particularly susceptible person.

Klerman (1974) himself views depression as a normal affect that plays an important role in the biological adaptation of the species to its environment. Klerman states that depression as an affect in primates and in human beings serves a signal function, a concept introduced by Engel (1962). Accordingly, depression signals, or informs, the social group, particularly the parental or mothering group, that one of its precious offspring is in some danger. The signal function is particularly important, given that primates produce very few offspring and that their offspring are born biologically immature and truly helpless. It becomes especially crucial during the phase of rapid central nervous system maturation and during the acquisition of cognitive, perceptual, motor and social skills.

Klerman (1974) has identified four adaptive functions of affect: (a) social communication, (b) physiological arousal, (c) subjective awareness, and (d) psychodynamic defence.

Social communication. The adaptive role of

depressive affect as social communication is underscored in studies of experimentally induced emotional states in animals (e.g., Harlow, Harlow & Suomi, 1971) and in studies of attachment and separation in human infancy (Bowlby, 1969, 1973). In Harlow's model two very clearly defined sequential stages of emotional response follow, when the infants are separated from their mothers. The first stage is characterized behaviourally by increased vocalizations and hyperactivity and was termed by Harlow and his co-workers the stage of anxious protest. In the second stage, which they termed depressive despair, the primate infants reduce all motor activity, engage in self-clasping and huddle in the corner. These behaviours are instrumental in reducing the chances of detection by a predator, in conserving energy and in communicating needfulness (Kaufman, 1973). Overall, these animal studies, based on a separation-loss paradigm, have yielded results analogous to those obtained in investigations of the clinical syndrome of anaclitic depression (Bowlby, 1969, 1973; Spitz, 1946) observed in human infants. Furthermore, both lines of research have obvious, relevant implications for the many clinical theories relating vulnerability of certain adults to depression to developmental experiences in infancy and childhood.

Physiological arousal. Engel (1962) and Schmale (1973) have attempted to define the physiological adaptive function of depression. They postulate that the depressed

state involves conservation-withdrawal (C-W). In accordance with this hypothesis, organisms respond to increased need by attempting to overcome or defend against the need or attempting to conserve resources by inhibition and inactivity. Whereas anxiety is the basic affect associated with attempts to cope by approach or active avoidance (fight or flight), the depressive affects of helplessness and hopelessness are associated with attempts to cope through energy conservation and withdrawal. Furthermore, the fight or flight state is accompanied by increased psychomotor activity and heightened adrenal-cortical activity. The C-W state, by contrast, is characterized by reduced psychomtor activity, lowered metabolism and increased parasympathetic activity. The C-W state certainly appears to characterize depressive conditions in human infants and primates, generally, as was noted above in the discussion on the signal function of depressive affect. Klerman (1974), however, questions the applicability of the C-W hypothesis to clinical adult depressions. He notes that in many instances the adult depressive state is accompanied by heightened adrenal-cortical activity and signs of anxiety and tension, factors at odds with the C-W hypothesis. It could be, he states, that physiological mechanisms operating in normal and/or infantile states fail in the depressed adult. Nonetheless, the basic notion of the C-W hypothesis is that the biological C-W reaction has as its intrapsychic component the depressive affects of hopelessness and

helplessness. These affects alert the individual and mobilize him to adapt by prompting alternative instrumental behaviours, changes in perception and relations in order to obtain more realistic sources of gratification.

Subjective awareness. There has been a longstanding debate in theorizing about emotions, centering around whether emotional responses precede bodily changes or whether conscious emotional experience follows the physiological reactions. Whichever, the fact is that the subjective awareness of an emotional state mobilizes the individual to action. As Klerman (1974) points out, there appears to be an universal acceptance of the position that subjective aspects of human emotion are important in reflection, goal setting and evaluation and regulation of progress towards goals in accordance with internalized values. This self-regulating function of affective awareness is crucial in maintaining self-esteem.

Psychodynamic defence. The classical version of psychodynamic theory viewed only anxiety as a primary ego state, which alerted the ego to initiate protective, defence processes. Depression in this formulation was secondary, and reflected the transformation of aggressive drives against the self. Recent investigations, however, strongly support the relative independence of hostility and depression (Weissman & Paykel, 1974), and point to depressive affect as a primary ego-state that serves important ego-adaptive functions. This view is consistent

with the psychodynamic formulations of the ego psychologists (e.g., Bibring, 1953; Sandler & Joffe, 1965).

Depression as Symptom

A symptom is defined by Webster's New Collegiate Dictionary (1973) as primarily a "subjective evidence of disease or physical disturbance" and more broadly as "something that indicates the presence of bodily disorder." Despite the fact that, prior to Beck (1967), few systematic studies delineating the characteristic signs and symptoms of depression were available, there seemed to have been a universal acceptance of particular depressive symptoms. In his landmark work on the clinical, experimental and theoretical aspects of depression, Beck reviewed a number of textbooks of psychiatry and monographs in order to identify those symptoms that had been attributed to depression by general consensus. In addition, he collected further data regarding the significance of occurence of symptoms by comparing depressed and nondepressed psychotherapy patients. Beck subdivided these characteristic prominent symptoms into four major categories: (a) emotional symptoms, (b) cognitive symptoms, (c) motivational symptoms, and (d) physical and vegetative symptoms.

Among the emotional manifestations of depression are included such signs as a dejected mood, negative feelings directed specifically toward the self, loss of gratification from previously pleasurable and valued activities, loss of emotional attachments and affection for people dear to the

depressed individual, frequent crying spells and loss of sense of humour. Cognitive manifestations centre around the depressed individual's low self-evaluations, negative expectations which find expression in a gloomy outlook and pessimism, self-blame and self-criticism, indecisiveness and distortion of body image. Motivational symptoms include loss of positive motivation, often referred to as paralysis of the will, increased dependency, a wish to avoid, escape from or withdraw from the usual pattern of life, with the extreme form of the escapist wish expressed in the form of suicidal wishes. Finally, among the characteristic vegetative and physical manifestations of depression are a loss of appetite, loss of libido, sleep disturbance and fatigability. In addition to the above, in cases of severe depression a number of delusions may be present, including delusions of worthlessness, delusions of crime and punishment, nihilistic and somatic delusions, and delusions of poverty. Hallucinations, typically auditory and with a condemning tone, are sometimes also found in cases of depression.

Thus, in accordance with the definition of a symptom provided above, while these symptoms would indicate the presence of a disorder, the very term depression is itself frequently used to signify a symptom. Used in this manner, the term depression denotes the presence of dysphoria, or sadness, that is often accompanied by associated features of depression but that does not meet the criteria for the

clinical syndrome of depression, which will be discussed in the following section.

Depression as Syndrome and Clinical Entity

The revised diagnostic and statistical manual of the American Psychiatric Association (DSM-III) (1980) may serve as a starting point in elucidating the concept of depression as a clinical syndrome. In order for a diagnosis of depression to be arrived at, the following criteria need to be met:

A. A dysphoric mood, or loss of interest or pleasure which is prominent and persistent.

B. At least four of the following:

1. Poor/increased appetite or weight loss/gain
2. Insomnia or hypersomnia
3. Psychomotor agitation or retardation
4. Loss of interest or pleasure in activities or decreased sexual drive
5. Loss of energy, fatigue
6. Feelings of worthlessness, self-reproach, or excessive or inappropriate guilt
7. Decreased ability to concentrate, indecisiveness
8. Recurrent thoughts of death/suicide

C. Neither of the following dominate the clinical picture:

1. Preoccupation with mood-incongruent

delusions or hallucinations

2. Bizarre behavior

D. Not superimposed on either Schizophrenia, Schizophreniform Disorder, or a Paranoid Disorder.

E. Not due to any Organic Mental Disorder or Uncomplicated Bereavement.

Depression as a syndrome, therefore, refers to the presence of a complex constellation of deviations in feelings, cognitions and behaviours and an absence of specific other signs. In addition to these characteristic signs and symptoms, when depression is conceptualized as a specific clinical entity, it is assumed to have certain consistent attributes, including a specifiable type of onset, course, duration and outcome.

It should be noted that the DSM-III utilizes the phenomenological approach in order to make syndrome specification more reliable. In this approach, patient reporting, or phenomenological descriptions of cardinal symptoms are the crucial ingredients in establishing a diagnosis. Currently, the DSM-III distinguishes three subtypes of purely depressive disorders: (a) episodic affective disorders (major depression, single episode or recurrent), (b) chronic affective disorders (dysthymic disorder), and (c) atypical affective disorders (atypical depression).

In summary, the term depression is employed in three

ways. First, it is used to denote a normal affect of crucial importance in the biological adaptation of the species to its environment. Second, when it refers to a symptom, the term depression denotes the presence of dysphoria, or sadness. Third, and perhaps most frequent, the term depression is used to denote a constellation of various symptoms, that is, a distinct clinical syndrome and disease entity.

Attention will now be directed to ways in which the clinical syndrome of depression has been conceptualized in clinical practice and research.

Classification of Depressive Disorders

The heterogeneity of depressive disorders is perhaps most clearly illustrated through results of psychopharmacological research aimed at assessing the therapeutic effectiveness of antidepressant medication. These investigations have failed to yield valid predictors of differential effectiveness for the various antidepressant medications, although recently particular biological diagnostic tests, such as the dexamethasone suppression test (e.g., Brown & Shuey, 1980), offer promise in differentiating among various subtypes of depression. However, the traditional lack of success in predicting response to somatic treatments of depression was due most likely to the heterogeneity of etiological and pathogenic factors in depressive syndromes (Kocsis, 1981).

The heterogeneity of depressive disorders has resulted

in numerous attempts to classify various types of depression. Most of the popular subtypes are dichotomous and include distinctions, such as endogenous vs. reactive, psychotic vs. neurotic, unipolar vs. bipolar, primary vs. secondary, and "pure" depression vs. depressive spectrum disease. These distinctions grew out of clinical experience and were helpful for the physician in predicting outcome and responsiveness to treatment. A number of writers, however, have questioned the validity of such dichotomies. Kendell (1976), for example, sees depressive illnesses as a unitary phenomenon, forming a continuum with severe or psychotic forms at one end and mild chronic forms at the other. Discussing his previous work, Kendell points out that results of his investigations, employing a discriminant function analysis of patient scores on a psychotic/neurotic dimension, found the distribution of these scores to be unimodal rather than bimodal. He concludes that these findings negate the presence of any precise boundaries among manifestations of depression.

Related to the dichotomous views of depression is the categorical system of classification. The underlying assumption of this approach is that specific, discrete disorders can be identified, and that the identification of these will lead ultimately to an elucidation of their etiology. Thus, this approach attempts to identify independent classes of disorder on the basis of characteristic symptoms, course of the illness, age at

onset, and so on, and to develop rules for assigning patients to these classes. In sharp contrast to the categorical approach is the polydimensional approach, which stresses the use of a number of different descriptive dimensions. Thus, Lorr (in Becker (1977)) contends that factor analytic data on depressives suggest a general factor of depression common to all variants, several subsidiary group factors such as psychotic and neurotic depression, and multiple specific factors related to each group factor. These specific factors might inlude factors such as severity of symptoms, personality characteristics, family history, life events and social supports. Because of their complexity, however, dimensional approaches are difficult to apply clinically, and clinicians typically rely on categorical and non-unitary systems of classification in diagnosing their patients and instituting appropriate treatment. A discussion of the more popular systems is presented next.

Endogenous vs. Reactive

The endogenous-reactive distinction has been popular both in clinical practice and research. Traditionally, endogenous depressions were contrasted with exogenous depressions, referring to those depressions that "arose from within" and those depressions that were "caused from without" respectively. The crucial distinction, therefore, was in terms of precipitating factors, with endogenous depressions ostensibly lacking a precipitant and exogenous,

or reactive, depressions having an identifiable precipitant initiating the depressive episode. The most distinctive characteristic of endogenous depressions are the accompanying vegetative, or physiological symptoms, including terminal sleep disturbance, weight loss and appetite disturbance, psychomotor agitation or retardation, decreased libido, and relative unresponsiveness to pleasant environmental changes. Furthermore, these depressions tend to occur in later life in persons who have had "good" premorbid personalities. By contrast, reactive depressions tend to lack the severity of biological disturbance seen in endogenous depressions and tend to occur in individuals with longstanding neurotic problems or personality disorders.

Despite the fact that mathematical and statistical studies of this distinction have yielded equivocal results, most clinicians appear to feel confident in their ability to identify a group of severely depressed patients, who will respond well to electroconvulsive therapy (ECT) or tricyclics and have a full recovery, and they refer to such depressions as endogenous.

Psychotic vs. neurotic

Endogenous depressions are sometimes referred to as psychotic depressions, and are then contrasted with neurotic depressions, the latter type of depression being synonymous with reactive depressions. Thus, the distinction between subtypes of depression becomes a dichotomy between psychotic vs. neurotic depressions and centres around the individual's

ability to reality test. As Frazier and Carr (1964) point out, neurotic depression is defined in terms of the patient's intact ability to test and evaluate reality, while psychotic depressions are accompanied by a serious disruption of reality testing ability. Essentially, the neurotic vs. psychotic distinction appears to form a continuum of grades of severity.

It is not difficult to see how confusion may arise through the terminological juxtapositions outlined above. The term "reactive" appears distinct from the term "neurotic" in that the former presupposes a precipitating external life event which is likely to clear up once the underlying stressor is resolved; on the other hand, the latter connotes, among other things a state resulting from internal psychological conflict which is likely to be chronic. Furthermore, although the term "endogenous" is sometimes synonymous with the term "psychotic" and, therefore, in contrast to reactive, some authors (e.g., Becker, 1977) speak of a reactive psychotic depression.

Thus, the issue becomes one of whether or not the endogenous vs. reactive and psychotic vs. neurotic distinctions have outlived their usefulness. It would appear that the term endogenous depression has utility as it corresponds with clinical reality. Endogenous depression is prominently biologic in its manifestations, and responds to specific somatic treatments. The term assumes even greater validity if the "caused from within" clause is removed, as

most individuals can identify some unhappy life situation or event of possible causal significance. The DSM-III, in fact, has adopted a phenomenological approach to defining endogenous depression, ignoring the role of precipitants in the definition. In addition, the presence of psychotic features can readily and reliably be ascertained in such depressions. By comparison, the neurotic or reactive depressive disorders appear to represent a considerably heterogenous group of disorders. In a recent review of the nosological status of neurotic depression Akiskal, Bitar, Puzantian, Rosenthal and Parks (1978) concluded that the concept of neurotic depression is no longer meaningful since it has not been characterized phenomenologically in a reliable or consistent way. To conclude, therefore, the most useful contrast in the endogenous formula might well be simply the term "non-endogenous."

Unipolar vs. Bipolar

A number of writers, most notably Leonhard (1959 (1979)), have argued for a more detailed classification of endogenous affective disorders. Leonhard introduced the element of polarity of the phenomenological pattern to assist in differentiating affective disorders of an endogenous type. Essentially, unipolar depression consists in recurrent relapsing and remitting depressive episodes, without episodes of mania or hypomania. Bipolar depression is a relatively rare condition in which periods of depression alternate, usually on an irregular basis, with

periods of euphoric overactivity and poor judgement, increased energy, flight of ideas and inflated self-esteem, so called hypomanic or manic phases.

Considerable evidence of possible genetic, familial, personality, biochemical, physiological and pharmacological differences between bipolar and unipolar patients has been documented, thus lending support to the unipolar vs. bipolar distinction, although particular investigators have argued for additional subtyping of both unipolar and bipolar disorders (see Andreasen & Winokur, 1979; Depue & Monroe, 1978).

At this point, the interested reader may wish to consult Table 1, delineating a number of psychosocial risk factors for affective disorders, extracted from a review of recent epidemiological studies by Hirschfeld and Cross (1982).

Primary vs. Secondary

The distinction between primary and secondary depressions has been emphasized by Robins and his associates (e.g., Robins & Guze, 1972). Primary depression is defined as a depressive syndrome arising in the absence of preexisting medical or psychiatric disorders. Secondary depression, on the other hand, refers to depressive syndromes occurring in a patient who had an antecedent illness. This classification system was essentially an attempt to take into account the frequent occurrence of depression in other psychiatric disorders. Although the

Table 1. - Summary of Psychosocial Risk Factors for Depressive Symptoms, Bipolar Depressive Disorder and Nonbipolar Depressive Disorder (from Hirschfeld & Cross (1982))

Sociodemographic variable	Depressive Symptoms	Depressive Syndrome	
		Bipolar	Nonbipolar
Sex	2:1 ratio of females (f) to males (m)	1.2 : 1 ratio of f's to m's	2:1 ratio of f's to m's
Age	Higher prevalence in Young adults (18-44 years). For f's, highest in those younger than 35, with peak prevalence in m's in 55-70 year range	Earlier average age of onset (late 20's) of first episode	Later average age of onset (middle to late 30's) of first episode.
		Generally, higher prevalence of depressive syndrome in younger age groups than older age groups	
Marital Status	Highest rates in divorced or separated individuals as compared with never married or married persons. In increasing order of risk: (a) married m's, (b) married f's, (c) single and widowed f's, (d) single, widowed or divorced m's, (e) separated and divorced f's	No relationship, although high levels of marital conflict	Lower rates in married individuals
Race	Usually higher incidences in blacks, but no difference if social class is taken into account	No differences for either	
Urban vs. rural dwellers	No significant differences	No significant differences for either	

Table 1. - Summary of Psychosocial Risk Factors for Depressive Symptoms, Bipolar Depressive Disorder and Nonbipolar Depressive Disorder (from Hirschfeld & Cross (1982)) (continued)

Sociodemographic variable	Depressive Symptoms	Depressive Syndrome	
		Bipolar	Nonbipolar
Social Class	Higher in persons of lower SES	Higher for high SES	Modestly higher for lower SES individuals
Life events	In decreasing order of magnitude of correlation with depressive symptoms: (a) marital stress, (b) parental stress, (c) occupational, financial, neighborhood stressors - account for about 25% of variance	For both: (a) generally more life events experienced in prior 6 months than general population or other psychiatric groups (b) no differences between bipolar-unipolar, or endogenous-reactive groups (c) significantly more "markedly threatening" or "exit" events in depressives as compared with controls, whereas same number of "desirable" or "entrance" events	
Personality	No systematic investigation	Aggressive, need to dominate	Introverted, neurotic, obsessional, higher levels of guilt, less need to dominate, need to maintain self-esteem through support and approval

primary vs. secondary distinction has proven useful in research endeavours by permitting the definition of more homogenous groups, its clinical utility has yet to be confirmed.

Pure Depression vs. Depression Spectrum Disease

Somewhat similar to the primary vs. secondary distinction is the method of subtyping depressive disorders, proposed by Winokur and his associates and based on the use of a genetic and familial methodology. Most recently, on the basis of family history Andreasen and Winokur (1979) have developed a hierarchical approach to the classification of affective disorders (see Figure 1).

As can be seen from Figure 1, Winokur's system is essentially a method of classifying unipolar depression. Accordingly, three groups of unipolar depressions have been identified: (a) pure depression (patients who have a family history of depressive disorder only), (b) depression spectrum illness (patients who have a family history of alcoholism, antisocial personality, hysteria, drug abuse, either alone or in combination with depression), and (c) non-familial depression (patients with no previous familial psychiatric history of any kind).

The difference between the primary vs. secondary distinction upheld by Robins and Guze (1972) and Andreasen and Winokur's (1979) classification system is in terms of where the primary vs. secondary distinction appears in the hierarchical arrangement. For Robins and Guze the primary

AFFECTIVE ILLNESS

PRIMARY SECONDARY

BIPOLAR UNIPOLAR

PURE DEPRESSION SPECTRUM NON FAMILIAL

Figure 1. - Classification of Affective Illness (Andreasen & Winokur, 1979)

vs. secondary distinction was a means of subtyping individuals suffering from unipolar depression. For Andreasen and Winokur, on the other hand, the primary vs. secondary distinction is presented as the first branch in a hierarchical classification system for affective disorders, generally, that is, both unipolar and bipolar affective illnesses.

Biochemical Classification

The classical biogenic amine hypothesis of affective disorders states that depression is associated with a functional deficit of one or more neurotransmitter amines at critical synapses in the central nervous system and conversely mania is associated with a functional excess of these amines. The biogenic amines which have been most implicated in the mediation or modulation of affect and behaviour are the catecholamines norepinephrine (NE) and dopamine (DA), and the indoleamine serotonin (5-HT), giving rise to the catecholamine and indoleamine hypotheses of depression respectively. The former hypothesis is favoured mostly in the United States, while the latter is supported primarily in Europe (Bemporad, 1978). Recently, a number of writers (Maas, 1975; Schildkraut, 1976) have reviewed the role of biogenic amines in depression and have proposed a biochemical classification of depressive disorders, based on whether there is a deficit of catecholamines (Type A depressions) or indoleamines (Type B depressions). Type A depressions are characterized by a NE deficit and have the

following characteristics: (a) they have a low pretreatment level of urinary 3-methoxy-4-hydroxyphenylethelene glycol (MHPG), the central metabolite of norepinephrine, (b) they show favourable therapeutic response to imipramine, which is biotransformed to the noradrenergic metabolite desimipramine, and (c) they fail to respond to amitriptyline, the indoleaminergic tricyclic. By contrast, Type B depressions are characterized by low levels of brain 5-HT, and are characterized by the following: (a) their pretreatment level of MHPG is normal, (b) they respond favourably to amitriptyline, the indoleaminergic tricyclic, and (c) they do not respond to imipramine or any of the noradrenergic tricyclics.

It would appear, therefore, that the biochemically derived classification system has both predictive validity in terms of treatment response and construct validity in terms of particular biogenic amine deficits underlying two types of affective disorder. A careful elucidation of differential phenomenological expressions of these two types of depression would increase its clinical usefulness.

The investigations into the role of the biogenic amines in disorders of mood has given rise to what might be termed biochemical theories of depression. Essentially, these theories view depression as a basic emotion, having reliable physiological correlates. However, despite some promising findings, no comprehensive biochemical theory of depression is available. Furthermore, the notion that affective

disorders reflect directly the levels of biogenic amines in the brain has been recognized as too simplistic by most investigators (Bemporad, 1978), and a number of writers have cautioned against the faulty reasoning that may be inherent in interpreting results of antidepressant effects. Baldessarini (1975), for example, notes that there "may be a risk of a **post hoc, ergo propter hoc** logical fallacy" (p.1092), as investigators accept that, since a behavioural disorder responds to a physical therapy, not only is an organic-metabolic cause implicated, but that the cause involves metabolic changes opposite to those produced by treatment.

In conclusion, it must be stated that, although the foregoing discussion of the classification systems of affective disorders has attempted to cover the more common systems in use, it is by no means exhaustive. For example, cluster analytic techniques have attempted to derive mathematically based systems of classification, as illustrated by Paykel's (1971) derivation of four categories of depression, differing with respect to the amount of psychotic, anxious, hostile and characterological features. Most recently, Blatt, Quinlan, Chevron, McDonald and Zuroff (1982) proposed the differentiation of affective disorders on the basis of the subjective experience of depression, and identified Dependency and Self-criticism as important independent dimensions in depression. Whether these, and various other, systems prove clinically useful in assisting

in the application of specific treatments and predicting outcome, and whether they can be characterized phenomenologically in a reliable or consistent way remains to be seen. One does, however, gain the impression occasionally that many of these classification endeavours remain at the level of sterile, academic research and are of little clinical relevance. Rather than advocating new labels, perhaps attempts should be made at reaching a consensus on the use of categories of proven clinical utility -- "endogenous," for example -- and research efforts aimed at further validation of these categories.

Theories of Depression

Numerous theoretical models of depression have been proposed, rendering a review of each and every one beyond the scope of the present work. A concise, lucid and more comprehensive account may be found in Becker (1977). Rather, the selective focus of this section will be on the more prominent and popular accounts of depression, both traditional and contemporary. Accordingly, the psychoanalytic and psychodynamic theories of depression will be reviewed, and a number of behavioural accounts of depressive phenomena discussed. Finally, the life events model will be considered, as stressful life events have been strongly implicated by numerous investigators in the pathogenesis of depression. The life events model, of course, stems from the Meyerian approach to psychopathology, which emphasizes the importance of experiential and

environmental causations and is, as discussed previously, in sharp contrast to the Kraepelinian disease model with its emphasis on somatogenic factors. The latter is reflected most strongly in the biochemical theories of depression, which have been outlined above in the discussion of biochemically derived systems of classifying affective disorders. This section will end with the presentation of an integrated model of depression.

Classical and Ego-Analytic Perspectives

Freud's interest in depression blossomed relatively late in his theoretical formulations. In 1917 he published his classical book **Mourning and Melancholia**, acknowledging that melancholia may take on various clinical forms, some of which appear more somatic than psychological in origin. Freud confined his discussion to only a few clinical cases, whose psychological nature was "indisputable," and cautiously claimed no general validity for his findings.

As Bemporad (1978) comments insightfully, **Mourning and Melancholia** is most noteworthy as it is the first time that Freud ascribes greater significance to the role of the ego in pathology and concurrently postulates that the blocking of libidinal energy does not play a role in the pathogenesis of a disorder. In addition, Freud introduces, also for the first time, a critical agency, a conscience, which later becomes the superego.

Freud (1917 (1957)) observed that melancholia, like

mourning, results from the loss of a loved object, either actually by death or emotionally by rejection. However, only in melancholia are there evident the extreme forms of self-reproach, a lowering of self-regard and an irrational expectation of punishment. Attempting to understand the melancholic's psychological predicament, Freud noted that it appeared as if one part of the melancholic's ego had set itself over and above it, judging it critically and viewing it as an external object. He further noted that the melancholic was not actually accusing himself, but the loved object, which became identified with the ego through a process of incorporation and introjection. Thus, the hostility that was felt for the disappointing or rejecting object was now experienced as directed against the ego, with which the object was now identified. In terms of predisposition to melancholia, Freud attached great importance to childhood experiences. Thus, a primal loss (e.g., death of a loved one) in childhood, resulting in the frustration of the need for affection and love, may be reactivated in later life by subsequent losses.

In The Ego and the Id, Freud's revised structural theory includes the superego (see Bemporad, 1978). Here, Freud proposes that the extreme discord between the superego and the ego, with the superego venting its rage against a seemingly helpless ego, is the crucial pathogenic factor in melancholia. The harshness of the superego is understood and explained in the context of his newly formulated death

instinct. Consistent with this, Freud adds that if aggression is not expressed outwardly, it will be turned against the self.

Freud's "aggression-turned-inward" conceptualization of depression had a great impact on clinical thought and practice. It will be remembered, however, that recent empirical investigations have shown that hostility and depression are relatively independent, indicating that depression is a primary ego state (Weissman & Paykel, 1974). From a theoretical point of view, ego-analytic writers, such as Bibring (1953) and Sandler and Joffe (1965) have emphasized that depression is a primary ego state affect possible in everyone.

For Bibring (1953) depressive illness was an affective state characterized most crucially by a loss of self-esteem. He argued that self-esteem may be lowered in ways other than by the frustration of the need for affection and love, as in Freud's formulation. Thus, self-esteem can be decreased and depression induced by the frustration of other narcissistic aspirations, such as the wish to be good, loving, clean and the wish to be strong and secure. Bibring believed that the frustration of any of these wishes would lead to a feeling of helplessness and a decrease of self-esteem. Essentially, therefore, some individuals are predisposed to depression because of unrealistic expectations which cannot be fulfilled, resulting in a state of tension within the ego itself, rather than between the ego and superego.

Furthermore, predisposition to depression is due also to excessive past experiences of feeling, and perhaps being, helpless. The impact of this aspect of Bibring's conceptualizations is clearly seen in some of the behavioural accounts of depression (e.g., Seligman, 1975).

Sandler and Joffe (1965) also view depression to be a basic affect that results from a discrepancy between the actual state of self and a desired ego ideal, with self-esteem being the felt expression of this disparity. Furthermore, Sandler, and Joffe conceive of depressive affect as serving a signal function, which stimulates ego defences.

To integrate, the significant contributions of Bibring (1953) and Sandler and Joffe (1965) is their emphasis on the importance of depressive affect as a primary ego-state, with depression resulting from a decrease in self-esteem due to a discrepancy within the ego between its perceived capacity and its aspirations.

Behavioural Approaches

Generally, behavioural accounts of depression focus their attention on depressed individuals' failure to avoid aversive aspects of their environment and concomitant failure to initiate or sustain effective contact with rewarding aspects of the environment. In sum, attempts to arrive at explanations for the reduced frequency of "adjustive behaviour" form the hub of the behavioural approach (Becker, 1977). Rather than seeking explanations

and rationales in terms of underlying causes in the recapitulation of intrapsychic conflicts, behavioural analyses of any behaviour, including depressed behaviour, emphasize primarily a psychology of the here and now, focusing on overt behaviour and its direct and indirect control by environmental events. In addition to this traditional rule of thumb, behaviourists have become increasingly tolerant of mediational concepts to help explain behavioural changes (e.g., Bandura, 1977) to such a degree that the person's cognitive events constitute the nucleus of particular behavioural accounts of depression.

What follows is a brief overview of two behavioural models of depression, which have stimulated a considerable amount of research and prompted innovative clinical approaches to the treatment of depression. These include Lewinsohn's (1975) social learning approach and Seligman's (1975) learned helplessness model of depression.

Social Learning Approach. Within a social learning theory framework, the cause of behaviour is assumed to reside in the person-behaviour-environment interaction. This triadic interaction is encapsulated in Bandura's (1977) principle of reciprocal determinism, which states that psychological functioning can best be understood in terms of continuous reciprocal interactions among personal factors (cognitive processes, expectancies), behavioural factors (operants) and environmental factors (reinforcers), all operating as interdependent determinants of one another.

Accordingly, depression is caused by a specific interplay of these three factors.

The main focus of Lewinsohn's (1975) approach is on the relationship between positive reinforcement and depression, with special attention being given to the effect that a reduction in the rate of response contingent positive reinforcement (RCPR) is assumed to have on the behaviour and on the affect of the individual. The crucial notion in the social learning approach of Lewinsohn is that depression results from a low rate of RCPR. That is, being depressed results from few person-environment interactions with positive outcomes for the person. The corollary hypothesis is that a high rate of punishing experiences also causes depression.

In discussing the reasons for low rates of positive reinforcement and/or high rates of aversive experiences Lewinsohn (1975) stresses three factors: (a) the lack of positive reinforcers and/or abundance of punishing events in the person's environment, (b) inability of the individual to obtain positive reinforcers and/or inability of the individual to cope effectively with aversive events, and (c) reduction of the relative potency of positive events and/or increase in the relative potency of negative events.

Although it appears to be true that depressives lack particular interpersonal skills, for example, assertive behaviours, the plight of the schizophrenic comes to mind immediately. The social skills deficit in schizophrenia is

of greater magnitude, yet results in a disorder distinct from depression. In fact, interpersonal difficulties figure prominently in most forms of psychopathology. With regard to the RCPR position, it is hard to determine whether the association between low rates of RCPR and depression is of causal significance. An equally tenable hypothesis is that a low rate of RCPR is a consequence or concomitant of depression that has an independent etiology (Becker, 1977).

Learned Helplessness Model. The role of a helpless ego in depression had been emphasized by Bibring (1953) and discussed above. An explicit statement of a helplessness theory of depression was proposed by Seligman (1975), who emphasized the similarities between helplessness produced in laboratory subjects exposed to uncontrollable aversive events and the major symptoms of depression. The basic tenet of the model asserts that lack of contingency between behaviour and reinforcement results in a set of learned helplessness (LH). The set of LH, once learned, is difficult to disrupt and results in a failure to initiate responses (motivational deficit), and a failure to learn new reinforcement contingencies that could terminate aversive conditions or elicit rewards. Depression results when people expect that their responses will not control the important outcomes in their lives.

Recently, Abramson, Seligman and Teasdale (1978) have proposed an attributional reformulation of the LH model. According to this reformulation, whether or not individuals'

helplessness will entail low self-esteem and whether or not their helplessness will generalize across situations and time is dependent on the kinds of causal attributions they make for their lack of control. Abramson and his associates propose three attributional dimensions which are crucial for explaining human helplessness and depression: (a) internal vs. external, (b) stable vs. unstable, and (c) global vs. specific. For example, attributing a lack of control to internal, stable and global factors leads to helplessness and depression with low self-esteem, and one that is stable across time and generalized across situations.

Both the original helplessness model and the attributional reformulation regard the expectation of no control as a sufficient, but not a necessary condition, for depression. As Abramson and his associates (1978) stress, there exists a subset of depression (helplessness depression) that is caused by an expectation of response-outcome independence and displays the symptoms of passivity, negative cognitive set, depressed affect and low self-esteem.

A more comprehensive and critical account of the reformulated LH position may be found in the February issue of the Journal of Abnormal Psychology, 1978, Volume 87, which has been dedicated in its entirety to a discussion of the LH model of depression.

To conclude the above selective overview of behavioural models of depression, it should be emphasized that, although

both the social learning and LH approaches are not without their critics, their greatest contribution lies in the fact that they have provided a coherent rationale for innovative and effective therapeutic approaches in the treatment of depression.

Life Events Model

A prominent orientation in the literature on depression focuses on the issue of whether the onset of depression is related to the presence of antecedent stressors. Historically, as was noted previously, the distinction between endogenous and exogenous, or reactive, depression was predicated on the absence or presence, respectively, of precipitating factors, although the psychobiological school of Meyer and his followers views all psychopathology as reactive.

The work of Paykel (e.g., 1974) and his associates exemplifies the life events approach to depression. Building on the work of Holmes and Rahe (1967), who attempted to quantify the amount of stress associated with social maladjustment, Paykel adopted this approach in measuring the amounts of stress experienced by individuals, who become depressed shortly thereafter. Results of one study (Paykel, Myers, Dienelt, Klerman, Lindenthal & Pepper, 1969) indicated that depressed individuals experienced three times the number of life-stress events experienced by control subjects. Furthermore, when these data were construed in terms of "exits," events that are almost

uniformly aversive and reflect actual or threatened losses or separations (e.g., death of a spouse), and "entrances," typically pleasant events (e.g., birth of a child), it was found that depressed patients had experienced significantly more exits from their social fields than the control subjects, while entrance events were not related to depression. Other more recent studies have found that exit events, arguments and financial reverses distinguished depressed from non-depressed heroin addicts (Prusoff, Thompson, Scholomskas & Riordan, 1977) and that depressed individuals reported more exits, undesirable events and uncontrollable interpersonal disruptions than anxious individuals (Barrett, 1979).

A strategy for separating "formative" influences (i.e., without the stressor events the depressive condition would not have occurred) from "precipitating" influences (i.e., the depressive condition would have occurred anyway, but appeared earlier in time because of life stress) was developed by Brown, Harris and Peto (1973). Employing this method, the authors concluded that life events do not seem to account for more than 25-30% of the variance in the causation of depressive disorders. It would appear, therefore, that life events do enter the etiologic chain of depressive disorders, probably have greater relevance to particular subtypes of depression, but are not the major factor in the pathogenesis of depressive disorders.

Melancholia: A Final Common Pathway

Cognitive, behavioural, motivational and physiological factors in clinical depression are most probably interactive, and different schools of thought base their therapeutic approach on one or more of these modalities in the belief that improved functioning in one area will generalize to other modalities as well. From an empirical standpoint, there is recent evidence that therapeutic effect is independent of treatment modality (McLean & Hakstian, 1979).

The above beliefs and empirical findings are consistent with the theoretical rationale of Akiskal and McKinney (1975), who have proposed an integrative model of depression, designed to bridge the gap between behavioural and biological models of depression. In conceptualizing the various pathogenetic influences that impinge on an individual to produce, what they term, melancholia, their argument appears to be a reflection of Susser's (1973) epidemiologic dictum that the most common causes are neither necessary nor sufficient, but contributory. Thus, they state that any viable theory of melancholia should consider genetic, developmental, interpersonal and physiological factors. Accordingly, they examine and consider factors such as multiple social stressors, lack of social support, deficient social skills, developmental object loss, biochemical and endocrinological factors such as monoamine depletion and hypothyroidism, genetic and familial factors,

concluding that these elements enter the etiologic chain of depressive disorders at various junctures.

Elaborating their argument, Akiskal and McKinney (1975) underscore the remarkable homogeneity of the clinical picture of melancholia, whether it is precipitated by object loss, reserpine, or facilitated by hypothyroidism. Furthermore, in primary depression there is an abundance of signs and symptoms reflecting limbic-diencephalic dysfunction. These include diurnal mood variations, anhedonia, diminished sexual drive, sleep and appetite disturbances, psychomotor retardation, and unresponsiveness to reinforcement. Thus, their final hypothesis is that "melancholia is the final common pathway of various interlocking processes at chemical, experiential, and behavioral levels that, in the language of neurophysiology, translate into a functional impairment of the diencephalic centers of reinforcement" (p.300). This conceptualization is presented visually in Figure 2.

The Akiskal-McKinney integrated model of depression constitutes an ingenious effort at reconciling insights from both sides of the Cartesian body-mind dichotomy, which in the study of mental illness is represented by the somatogenic, or Kraepelinian school, and the environmentalist, or Meyerian school, respectively. In a word, it attempts to provide a sophisticated interactional model between human neurobiology and life events. What awaits further research is the mammoth task of elucidating

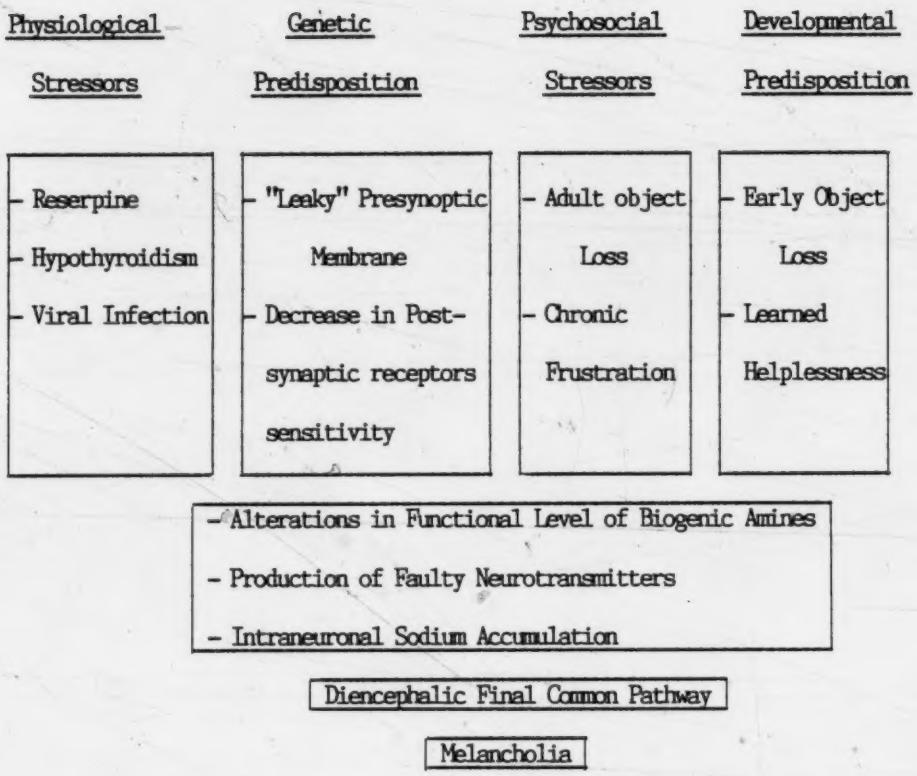

Figure 2. - Melancholia: Final Common Pathway (from Akiskal & McKinney, 1975, p.300).

more clearly the modes of interaction between biological, environmental, developmental and genetic factors in order to provide stronger validation of a model, which logically is the most plausible of all theories of depression.

Summary and Conclusion

This chapter has attempted, rather ambitiously, to provide the reader with an appreciation of the vagaries of thought on depression. In exploring the denotations of the term "depression," we saw that it has become a referent for an indication of an underlying disorder, a symptom, for a clinical syndrome, and for a normal, everyday affect, serving important adaptive functions. We next journeyed through the often confusing mist of classificatory systems of depression. In this regard, it appears that the term "endogenous" depressions has proven to be of greatest clinical utility, once the clause of "in the absence of precipitants" has been partialled out, and should be contrasted most fruitfully with the term "non-endogenous" depressions, which await further clarification. Furthermore, within the endogenous side of the equation, the unipolar-bipolar distinction also shows considerable promise,with various investigators attempting to delineate this distincion further (see Figure 2). Finally, a number of theoretical accounts were explored, all of which find a niche in Akiskal and McKinney's integrated model of depression, which was offered in an attempt to build a conceptual bridge between the biological and the life events

schools of thought. Both logically and clinically plausible, this promising model awaits further clarification of the interactional patterns of genetic, developmental, biological and interpersonal factors in producing the final common pathway of melancholia.

What is needed in the field of literature on depression is for concerned writers to stop advocating their preferred and pet models and labels, for, at best, these are far too simplistic. What is not needed is a cancerous proliferation of new, often superficial ideas, which, on occasion, lead to the impression that many investigators in the field spend much of their time on an analyst's couch freely associating to concepts and ideas on depression and indulge in research for the sake of research. Consensus must be reached regarding the most valid, reliable and promising ideas and hypotheses (e.g., Akiskal-McKinney model), and research endeavours aimed at accumulating further information about them.

The following chapter will present a discussion of Beck's cognitive model of depression, which constitutes the background of the present study. Empirical evidence in support of the model will be offered, and other literature, relevant to the study, will be reviewed. It is recognized that cognitions form only part of the depressive equation, and would be subsumed under developmental, experiential factors in Akiskal and McKinney's model. Further validation of Beck's cognitive model of depression was deemed

necessary, however, primarily as it provides the rationale for a unique psychotherapeutic approach to depression, whih has proved quite successful, yet the rationale itself has not been sufficiently empirically tested.

CHAPTER 3

Review of Literature: 2

The idea that a person's beliefs and cognitions influence his behaviour has been in existence for a long time. For example, two main tenets of Stoic philosophy were that "human emotions are basically idiogenic in their origin, and that to control or change even one's most violent and intense feelings, one mainly would better change one's ideas" (Ellis, 1973, p.167). Similarly, for Adler the understanding of the individual required the understanding of his cognitive organization, the "life-style," together with his "basic mistakes" (Mosak & Dreikurs, 1973). These basic mistakes included such elements as overgeneralizations, faulty values and misperceptions of life, and are roughly equivalent to Ellis' (1973) "irrational beliefs" and Beck's (1976) "cognitive distortions."

The following section of this chapter will address Beck's general cognitive model of emotional disorders, and will then present a more specific account of his cognitive model of depression. A review of empirical research into the validity of the cognitive model of depression will follow together with a brief review of investigations into the operations of memory in depression. The chapter will conclude with an outline of the purpose of the present study.

Cognitive Model of Emotional Disorders

The concept of man, as a practical scientist, utilizing the prototype of the experimental method, serves as a point of departure in Beck's (1976) construction of his cognitive model of emotional disorders. Beck notes that, whereas initially man learns primarily through trial and error and inductive reasoning, he subsequently employs deductive reasoning to reach conclusions about problematic situations that he has already worked out. Man is constantly organizing and interpreting reality, and for the most part his interpretations are realistic. In psychopathology, however, the individual has a tendency to form incorrect premises and is prone to distort his cognitive experiences, which results in an inadequate organization and interpretation of reality.

Beck's discovery of the kinds of cognitive processes that play an important role in psychopathology was the result of many years of clinical practice as a psychoanalyst and psychoanalytic psychotherapist (Beck, 1976). He found that, even though his patients had learned to follow the rule of free association without censoring their ideas, they had nevertheless streams of thought that they had not been reporting. Asked to describe them, the patients revealed that these thoughts emerged automatically and were extremely rapid. Further questioning showed these thoughts to be of a transference nature, that is, evaluative of the therapist's reaction to what the patient was telling him. Subsequently,

however, the patients were able to recognize that these thoughts emerged also in their interactions with other people.

Because of their rapid emergence and automaticity, Beck (e.g., 1976) termed these thoughts "automatic," and was able to delineate a number of characteristic features of these thoughts. They were specific and discrete, appearing in the manner of a telegram, and they were reflexive, occurring without deliberation or reflection. In addition, they seemed autonomous, in that they were difficult to turn off, and they were plausible to the patient, while seeming far-fetched to the objective listener. Furthermore, they seemed perseverative in nature, extending across time and across situations. Generally, these thoughts involved more distortion of reality than did other types of thinking.

From these clinical observations, Beck (1976) was able to draw a general rule, which stated that a sequence of thought intervenes between an external event and an unpleasant emotional reaction. Furthermore, in order to understand an individual's emotional response to an external event, Beck argued that one needs to access the individual's personal or private meaning of an occurrence, rather than the public, or dictionary, interpretation of an event. It is when these private interpretations consistently depart from reality and cannot be explained simply in terms of incorrect information that they can justifiably be labelled deviant, although as we have seen, these interpretations are

plausible, real, veridical for the individual. These consistent, deviant private meanings, interpretations constitute the cognitive distortions that form the core of emotional disorders. Thus, the crucial notion in the cognitive model of emotional disorders is contained within the thesis that the special meaning of an event determines the emotional response.

Allied to the above thesis is Beck's (1976) concept of the personal domain. An individual's personal domain are those objects, tangible and intangible, to which he attaches special meanings and judges to be of particular relevance to him. The person's concept of himself, his physical and personal characteristics, his goals and values lie at the heart of the domain. Around the self-concept are objects such as family, friends, possessions which the individual has invested with special meaning. Ideals, such as freedom, morality and more abstract entities, such as nationality, complete the domain. The idea of a personal domain is important in that an emotional response will occur only if an event is judged by the individual to impinge in some way on his domain.

Once an event is judged to infringe on the personal domain, an emotional response follows. The nature of a person's emotional response is determined by the individual's interpretation of the nature of that infringement. Thus, if an individual perceives an event, essentially a loss of some kind, as subtracting from his

domain in some significant way, he experiences sadness. Conversely, if an individual increases his evaluation of his domain by gaining a friend, for example, his emotional response is that of euphoria and excitation. An anxious emotional response follows when an event is perceived as threatening to the personal domain, while anger is the result of judging an event as a deliberate, direct, unjustified assault on the personal domain. Beck further contends that the typical ideation preceding the above "normal" emotional reactions has a counterpart in the characteristic ideation found in depression, mania, anxiety reactions and paranoid states, respectively. The significant difference between normal emotional reactions and psychological disorders is that a consistent distortion of a realistic situation characterizes the ideational content of the disorders.

In summary, the main thesis of Beck's (1976) cognitive approach to emotional disorders is that the personal meaning an individual attaches to an event determines his emotional reaction. However, his most crucial discovery and contention is that the content of these personal meanings is idiosyncratic. That is, not only does an individual patient exhibit a peculiar content of automatic, personal meanings, but also other patients with the same diagnosis. The content of these thoughts, therefore, determines the nature and type of psychological disturbance.

Of more direct relevance to the present study is Beck's

cognitive model of depression, and it is to his conceptualizations therein that we now draw attention.

Cognitive Model of Depression

Beck's cognitive model of adult depression, updated and expounded most recently in a comprehensive text (Beck, Rush, Shaw & Emery, 1979), is among the most influential theories of depression at the present time. The central tenet of this model is the view of depression as essentially a thinking disorder. Depressed individuals demonstrate three major cognitive patterns that revolve around a negative view of self, the environment and the future, and are referred to collectively as the cognitive triad. While these cognitive patterns address the content of depressed individuals' thinking, they appear to be a function of the operation of depressive schemata, or cognitive structures. These schemata are also responsible for activating a series of cognitive errors, or idiosyncratic cognitive distortions. These main elements of Beck's cognitive model of depression will be expanded on next.

Cognitive Triad

Essentially, the thematic content of depressive cognitions is characterized by the perception of loss, whether real, imagined, or anticipated, and is reflected in a systematic negative bias against the self, a negative view of the world, and a pessimistic outlook on the future.

Negative view of self. The first component of the cognitive triad revolves around the depressed individual's

negative view of himself. His self-perceptions and observations are made in accordance with criteria of inadequacy, deprivation, deficiency. The unpleasant experiences that a depressed individual undergoes are attributed to internal factors, that is, personal shortcomings. Because of his numerous defects the depressed individual deems himself undesirable and unattractive, and because of them tends to underestimate, criticize and reject himself. Furthermore, not only does the depressed individual perceive himself as possessing all possible negative attributes, he views himself as lacking any positive attributes essential to happiness, such as intelligence, conscience, or attractiveness.

Negative view of the world. The second component of the cognitive triad focuses on the depressed individual's interactions with his environment. He consistently and systematically interprets both past and current events in a negative way, even though more plausible interpretations are available. Generally, the world is viewed by the depressed individual as oppressive, constantly making exorbitant demands and mounting obstacles to prevent achievement of his life goals. Thus, all interactions with his environment are interpreted in terms of defeat, deprivation and disparagement.

Negative view of the future. The third component of the cognitive triad refers to the depressed individual's consistent pessimistic outlook on the future. Essentially,

the depressed individual sees no end to his current difficulties or suffering, anticipating a life of unremitting hardship, frustration of his goals and deprivation. This outlook of hopelessness leads to the depressed individual's reluctance to undertake tasks, as his expectancy is that he will fail.

Not only do these three cognitive patterns dominate the content of the depressed individual's thought, but, it is Beck's contention, that they are responsible for the other phenomena of depression (Beck, Rush, Shaw & Emery, 1979). Thus, for example, motivational changes in depression, such as paralysis of the will, result from the individual's pessimistic and hopeless outlook on the future, while profound motor inhibition may be related to the depressed individual's expectation of failure.

It should be remembered that the depressed individual's negative view of self, his world and the future is closely associated with aspects of the self and the world that are valued, that is, aspects that constitute his personal domain. It is only following a significant loss to the personal domain that the depressive exhibits thinking which is distorted and biased against the self.

Cognitive Errors

Whereas the cognitive triad refers to the content of a depressive's thought, the systematic cognitive errors have to do with the actual thinking process, that is, what depressed individuals do. One way that the thinking

disorder in depression can be conceptualized is in terms of primitive, as opposed to mature modes of thinking (Beck, Rush, Shaw & Emery, 1979). The depressed individual organizes and interprets reality in terms of judgements, which are global, extreme, categorical, absolute and moralistic. By contrast, the thinking of a mature individual is multidimensional, relative, situation-specific and non-judgemental.

The above argument closely parallels the concept of cognitive complexity, proposed by Schroeder, Driver and Streufert (1967). According to these authors the cognitive processes of individuals at low levels of cognitive complexity tend to be characterized by a unidimensionality of stimulus interpretation, their cognitive dimensions are dichotomous (e.g., good vs. bad, with no middle ground), and they employ categorical thinking in their interpretations of people and situations, tending to have an overgeneralized perception of these. On the other hand, individuals functioning at the highest levels of cognitive complexity are able to adopt a distinctively abstract and theoretical approach in their thinking, a view which resembles Beck's (1976) notion of man as a practical scientist. Accordingly, highly conceptually complex individuals are capable of employing a greater number of schemata and dimensions in arriving at diverse interpretations of the same situation; not only that, they also possess increased potential to generate alternate patterns of interactions and new

schemata.

Beck and associates (1979) have described the following systematic cognitive errors, which operate in the thinking of depressives: (a) selective abstraction, focusing on a detail of an event taken out of context while simultaneously ignoring other more salient features of the situation, (b) arbitrary inference, reaching a conclusion in the absence of supporting evidence or in the face of evidence which is contradictory to the conclusion, (c) overgeneralization, drawing a general negative rule or conclusion from a single isolated incident and applying it indiscriminately to related and unrelated situations, (d) magnification and minimization, referring to gross errors in evaluating the significance of events, (e) personalization, making the undue inference that external events pertain to oneself, and (f) absolutistic/dichotomous thinking, placing all experiences in one of two opposite categories, with the self inevitably placed in the negatively valued category.

Depressive Schemata

Beck's construct of depressive schemata is an attempt to conceptualize the structural organization of depressive thinking. This hypothetical construct is invoked to explain both how depression is activated and why a depressed individual maintains his painful and self-defeating attitudes despite evidence to the contrary.

The concept of schema is not new in psychology. Beginning with Bartlett (1932), cognitive psychologists have

emphasized the importance of "cognitive structures" or "schemata" in guiding people's interpretation and comprehension of information (e.g., Bobrow & Norman, 1975). Although the term "schema" has been defined in a number of ways by cognitive psychologists, there seems to be general agreement that the term refers to an organized representation of prior knowledge that guides the processing of current information (e.g., Neisser, 1967; Ross, 1978).

A number of writers have attempted to elucidate the functions of schemata. For Neisser (1967), one of the most important functions of schemata, given the limitations of human processing and attentional capacities, is their selectivity in what people notice, learn, remember and infer in any situation. Schemata, thus, facilitate perception, comprehension, recall and problem solving. However, one of the important consequences of their operation are bias and distortion. It appears that information that is inconsistent with the general organization of the schema is often omitted, while other aspects of the information are elaborated to be consistent with the activated schema (e.g., Bartlett, 1932; Bransford & Johnson, 1972).

Beck's depressive schemata fulfill the above functions. In his earliest writings on schemata in depression Beck (1964) conceived of them as "relatively stable cognitive structures which channel thought processes, irrespective of whether or not these are stimulated by the immediate environmental situation" (p.562). The plethora of stimuli

inherent in any situation are screened, coded and evaluated through the function of these cognitive structures, with only specific stimuli being attended to. Furthermore, these structures are assumed to be fairly stable due to the observation that an individual reacts in a consistent way to similar types of events.

It is Beck's contention that these depressive schemata lie dormant in a depression-prone individual, become activated by particular kinds of circumstance and may lead to a full-blown depression (Beck, Rush, Shaw & Emery, 1979). Beck uses the example of a marital break-up reactivating the irreversible loss of losing a parent in childhood. Thus, depression is triggered by situations analogous to the experiences responsible for embedding the depressive schema.

As depression deepens, these depressive schemata become increasingly and abnormally potent and intense. One of the consequences of this is that the resulting cognitions seem to be unusually intense (Beck, 1964). As a result, the depressed individual attends to ideas with the greatest intensity rather than those with the greatest relevance to reality. It is this hypothesized operation of depressive schemata that underlies the cognitive errors, or distortions, that the depressed individual exhibits. As the depressive schemata become more dominant, situational details are selectively extracted and moulded to "fit" the schema, instead of an appropriate schema being selected to "fit" the external details, which results, of course in

distortion of reality.

Not only are the depressive schemata responsible for the cognitive errors seen in the depressive's thinking, they are also crucially instrumental in determining the content of thought. For as Beck (1964) notes, "in a formation of a cognition the schema provides the conceptual framework, while the particular details are "filled-in" by the external stimuli" (p.563).

Thus, Beck's construct of depressive schemata would appear to be the critical concept in his cognitive model of depression. They are claimed to be responsible for the negative content and cognitive distortions of a depressive's thinking, and are invoked as the mechanism through which depression is activated and maintained. In addition, they are utilized to account for the proneness of particular individuals to depression. As Beck states, it would be implausible to assume **de novo** creations of aberrant cognitive mechanisms with each depressive episode. Rather, the notion of a relatively enduring anomaly in the depressive's psychological system presents as more credible.

Despite the centrality and criticality of this theoretical issue, involving depressive schemata, it has received relatively little empirical attention. It is for this reason that selected aspects of the issue are proferred for empirical scrutiny in the present study. However, before outlining the purpose of this current research, results of empirical investigations of Beck's cognitive

model of depression will be reviewed in the following section of this chapter.

Empirical Findings

The following section is planned to mirror closely the components of Beck's cognitive model of depression outlined above.

Cognitive Triad

As we have seen previously, the depressed individual's negative view of self, his world and the future, collectively known as the cognitive triad, refers to the content of his thought. In one of the earliest studies (Beck & Hurvich, 1959), an attempt was made to confirm the clinical observation that the dreams of neurotic-depressive patients showed a high frequency of unpleasant content or affect of a particular kind. The content included themes of rejection, disappointment, frustration, and criticism, while the affective responses were those of sadness, guilt and humiliation. These negative themes were termed "masochistic," as the dreamer appeared to make himself the recipient of criticism, rejection and other discomfort. The manifest content of the first 20 dreams in treatment was analyzed in a small group of depressed female patients compared with a matched group of nondepressed control patients. Results confirmed the hypothesis that depressives show a greater incidence for negative, mashochistic content in their dreams. Corroboratory evidence was sought in a subsequent study (Beck & Ward, 1961), utilizing a

larger-sample and additional measures in order to test whether masochistic content was evident in other types of ideational material. Data demonstrated that depressives were characterized by significantly more masochistic content in their recent dreams and their three earliest memories, and that they also obtained greater masochism scores on a structured projective test and a masochism inventory.

More recently, in an ingenious sleep laboratory study of REM dreams in a group of individuals fully remitted from serious reactive depression and a group of normal controls, Hauri (1976) found that the dreams of his experimental subjects were characterized by a significantly greater proportion of masochistic content. In addition, the dreams of the patients remitted from depression were characterized by themes of hostility, yet this hostility neither emanated from the individual nor was it specifically directed against him, leading the author to conclude that the remitted depressed dreamer perceives the world as a generally hostile place. Given this, it is not difficult to see how the depressed individual may view his environment in a negative manner. Another finding of interest was the fact that the remitted depressives dreamt more about past issues and time elements, which according to Breger (cited in Hauri, 1976) is an indication of unresolved past conflicts. By implication, if there exists such a preoccupation with a problematic past in the remitted depressed patient, it would be reasonable to expect this concern to be more pronounced

in the currently depressed individual, thus resulting in a negative outlook on the future. Overall, Hauri concluded that some personality traits are chronically disturbed and do not improve when the depressive episode subsides, a statement consistent with the notion of a depressive personality.

Utilizing a story completion paradigm, Weintraub, Segal and Beck (1974) investigated the relationship of negative cognitive content to depressed mood in normal, undergraduate males. The groups of sentences completing the story contained themes, drawn from Beck's (1967) description of the cognitive triad, and included: (a) expectations of discomfort, (b) expectations of failure, (c) negative perception of interpersonal relationships, and (d) negative perception of self. The authors found that these four dimensions were highly intercorrelated, suggesting that the negative content is a unified, cohesive entity. Furthermore, a stable positive relationship was found between this negative content and depressed mood.

Additional support is now presented for each separate component of the cognitive triad.

Negative view of self. Self-esteem has been defined traditionally as the degree of congruence between the way a person perceives himself and the way he would like to be, that is his Real Self and his Ideal Self respectively. Employing a semantic differential test, Laxer (1964) compared the degree of congruence between the Real Self and

the Ideal Self of a group of depressed, a group of paranoid, and a group of other hospitalized patients upon admission and prior to discharge. He found that only the depressed individuals moved from very low to relatively high Real Self ratings and exhibited a positive correlation between Real Self and improvement. By contrast, the Ideal Self ratings remained relatively constant during the stay in hospital for all groups. These findings suggest that low self-esteem, that is, a significant disparity between the Real Self and the Ideal Self, is associated with depression and is enhanced as the depression is alleviated.

In a more experimental vein, Coleman (1975) investigated the general role of evaluative self-statements as determinants of depression and elation. Positive or negative self-evaluative statements were utilized in order to manipulate changes in self-esteem in a higher or lower direction, respectively. Results of the study showed that the induction of positive versus negative cognitions produced significant differences in the expected direction on multiple measures, including a measure of psychomotor speed, a confidence test, a free association task, a measure of mirth, and a measure of social interaction. Furthermore, characteristically elated and depressed subjects were able to take on opposite mood states. Coleman concluded on the basis of these results that self-esteem is a determinant of elation-depression and, more specifically, that negative self-evaluations are determinants of depression.

The above findings of Laxer (1964) and Coleman (1975) with depressed adults were consistent with results of a study investigating the relationship between self-esteem and depressive symptoms in grade 5 and grade 6 children (Moyal, 1977). Among other findings, poor self-esteem, expressed through the children's tendency to choose self-blaming and helpless responses in response to imaginary situations, was strongly positively correlated with depression. That self-blaming and self-critical statements are characteristic of low-self-esteem individuals was corroborated also by Vasta and Brockner (1979).

Much of the research deriving from Beck's theory of depression has used probability-of-success and level-of-aspiration ratings while exposing subjects to success and failure conditions. Loeb, Feshback, Beck and Wolf (1964) found that depressed subjects tended to be more affected than nondepressed subjects when they were asked to predict the likelihood of success on a future task, making significantly lower ratings of their performance. This was despite the fact that they performed as well or better than the nondepressed group. These findings were replicated in a later study (Loeb, Beck & Diggory, 1971), in which depressed outpatients and nondepressed controls were asked to estimate the probability of their success on a card-sorting task. While the levels-of-aspiration, nor indeed actual performance, differed between the two groups, the depressed patients rated their chances of success lower and their

performance poorer than did the nondepressed control subjects.

Klein, Fencil-Morse, and Seligman (1976), working from a learned helplessness model of depression, manipulated the degree of helplessness by providing their depressed and nondepressed subjects with experience of solvable and unsolvable problems. Furthermore, with respect to the latter, a set of instructions manipulated the attributions of failure either to internal or external causes. The subjects were then tested on a series of patterned anagrams. The authors found that depressed subjects were more likely than nondepressed subjects to attribute performance failure to their own abilities, although when they were induced to attribute their failure to the difficulty of the problems rather than to their own incompetence, their performance improved strikingly. Klein and his associates concluded that failure in itself is insufficient to produce helplessness deficits, hence depression, in man, but failure which leads to a decreased belief in personal competence is sufficient.

Kuiper (1978) questioned the generalizability of the above findings of Klein and associates (1976), arguing that the attributions of failure (internal vs. external) were experimentally manipulated and hence applicable only under those circumstances. However, his own study, which placed depressed and nondepressed subjects in a failure situation in which no attempt was made to influence attributions in

either an internal or external direction, demonstrated that only depressives persisted in attributing their failure to internal or personal causes. Interestingly and, by contrast, nondepressives attributed their failure in the same situation to external causes. As a result, Kuiper speculated that the nondepressives' external attributions for failure may represent an effective strategy for preventing the occurrence of depression, whereas the depressives' internal attributions appear instrumental in the development of depression. He concludes that this is consistent with the notion of a self-protective bias (e.g., Miller, 1976) which operates only in nondepressives.

Similar findings were obtained by Rizley (1978). Controlling the success and failure of her depressed and nondepressed groups, she instructed her subjects to perform a number-guessing task, in which they were to predict the order of numbers presented. Results of her study indicated that depressives ascribed more significance to internal causal factors (effort and ability) for their failures than nondepressives, but judged these factors as less important determinants of success. Rizley concluded that these findings were consistent with the notion of a systematic negative bias against the self, predicted from Beck's theory.

Negative View of the World. As was noted previously, the depressed individual construes his experiences and interactions with his environment in a

negative way.

One of the clearest illustrations of the depressive's consistent negative interpretation of his experiences is the selectivity of recall of past experiences. Lishman (1972) hypothesized that the usual balance between memory for pleasant and unpleasant experience would be altered in the presence of emotional disturbance. He used a semantic differential questionnaire in order to obtain the feelings of his depressed and non-depressed subjects regarding a number of preselected topics. After completing the questionnaire, subjects were asked to recall as many of the topics, which were either pleasant or unpleasant in tone, as they could. Lishman's findings indicated that, whereas there was no difference between depressed and nondepressed subjects in terms of overall frequency of recall, there was a tendency for the strength of association between hedonic tone and recall to diminish as depression increased in severity. That is, depressed individuals tended to recall material with a higher negative tone. In an extension of this study, Lloyd and Lishman (1975) studied the effect of depression on the asscіation between the readiness of recall of an experience and its hedonic tone, pleasant or unpleasant. The authors recorded the time taken to recall real life personal experiences, both with pleasant and unpleasant affective connotations, in response to a predetermined list of stimulus words. They demonstrated that, as severity levels of depression increased, the ratio

between the speed of recall of unpleasant and pleasant memories progressively diminished, with depression exerting its effect mainly by the speeding up of recall of unpleasant memories.

A study by Clark and Teasdale (1982) investigated the association between diurnal mood variation and accessibility of memories of positive and negative experiences. They found that memories of experiences that had been unhappy were more likely to be retrieved on the more depressed occasion than on the less depressed occasion. On the other hand, they demonstrated that memories of positive, happy experiences were more likely to be retrieved on the less depressed occasion than on the more depressed occasion. Additionally, it was shown that the current hedonic tone of a recalled experience was more likely to be rated as less positive, or more negative than the original hedonic tone the more depressed a person was while making the ratings. Clark and Teasdale concluded that in depressed mood there is an increase in the accessibility of negative cognitions and a decrease in the accessibility of positive cognitions. This results most likely in more negative interpretations of current experience, as well as more rumination on past negative experiences and probably more negative predictions about the future.

This selectivity of recall, demonstrated by the above studies, is also evident in depressives, when they are asked to estimate or recall the amount of positive feedback.

Thus, Wener and Rehm (1975) demonstrated that depressed students tended to underestimate the amount of positive feedback they had been given during an experimental task. The authors contended that this finding appeared related to Beck's argument of a negative view of the outside world as one of the primary cognitive manifestations of depression. This phenomenon, they argued, may also have been related to the notion that an increased sensitivity to negative and decreased sensitivity to positive reinforcement is operative in depression (Lewinsohn, Lobitz & Wilson, 1973). They concluded that their depressed subjects may have been overestimating the amount of negative feedback.

The work of Wener and Rehm (1975) was instrumental in stimulating subsequent investigations into the recall of reinforcement in depression. Thus, Nelson and Craighead (1977) found that depressed subjects underestimated the frequency of obtained reinforcement and overestimated the frequency of punishment relative to nondepressed subjects, although this was significant only at high rates of positive feedback and low rates of negative feedback. Of additional interest was the finding that depressed individuals self-reinforced less than the controls, but showed no differences in rates of self-punishment. While this study utilized college students, DeMonbreun and Craighead (1977) attempted a replication with clinically depressed individuals and normal and psychiatric controls. However, in addition to testing the hypothesis that depressives

distort their perception of environmental feedback, they sought information regarding whether this distortion occurred at the point of stimulus input or at some subsequent stage of cognitive processing. They also wanted to determine if there exists a distortion of neutral feedback in a negative direction. The results of this investigation revealed that the cognitive processes of depressed individuals distort environmental feedback, but only under conditions of high rates of positive feedback, in which they recall having received less positive feedback. Furthermore, it apears that this distortion occurs at a point subsequent to the immediate perception of feedback, as there were no differences among the groups on this factor. Finally, the hypothesis that a process of distorion of neutral feedback in a negative direction is operative in depression was not upheld. Thus, the most consistent finding from the above studies is the underestimation of positive feedback under conditions of high rates of positive feedback, corroborated most recently by Dobson and Shaw (1981).

A study by Hammen and Glass (1975) compared hypotheses deriving from an operant model of depression (Lewinsohn, 1975) and from more cognitively oriented approaches (Beck, 1967; Seligman, 1975). They found that, contrary to Lewinsohn's contention, inducing depressed individuals to increase participation in enjoyable activities did not necessarily reduce their depression, and concluded that the

hypothesis that intensity of depression covaries with amount of response-contingent-reinforcement is perhaps misleading. Rather, what their results demonstrated was that the subjects who increased the number of their pleasurable activities actually rated these activities less positively. Thus, a significant dysfunction in the evaluation of reinforcers appears instrumental in the maintenance of depression. Although Hammen and Glass' results are somewhat inconsistent with DeMonbreun and Craighead's finding that depressives do not distort their experiences at the point of stimulus input, overall results of the above studies are congruent with Beck's thesis that depressed individuals view their world as unfriendly and devoid of satisfaction.

Negative view of the future. Data congruent with Beck's delineation of the third component of the negative cognitive triad in depression are provided by studies investigating the future time perspective in depressives. Wohlford (1966), for example, found that negative affect shortens protension (that is, extension of personal time into the future), while also diminishing the frequency of cognitions concerning the future and increasing the frequency of cognitions concerning the past. Similarly, Dilling and Rabin (1967) found that while both depressives and schizophrenics were less future time oriented than normals, the curtailment of a future perspective was most severely pronounced in the depressed individuals.

Stronger evidence for a negative view of the future in

depression derives from studies which have studied the state of hopelessness, defined by Stotland (1969) as a system of cognitive schemata whose common denominator is a negative expectation about the future. In an investigation of types of hopelessness in psychopathological states, Melges and Bowlby (1969) found that the belief in the efficacy or inefficacy of skilled action becomes a fundamental component of a person's self-esteem and a key factor in determining his feelings of hopelessness. More specifically, they demonstrated that a hopeless view of the future predominates in severely depressed patients. Erickson, Post and Paige (1975) in a more direct test of aspects of Stotland's theory of hope found that psychopathology was associated with lower estimates of perceived probability of goal attainment, that is higher levels of hopelessness.

The relationship of the hopelessness component of depression and suicide has been investigated by a number of studies (Beck, Kovacs & Weissman, 1975; Minkoff, Bergman, Beck & Beck, 1973). Generally, results of these investigations have shown that the correlation between hopelessness and suicidal intent is higher than that between depression and suicidal intent and, furthermore, that the latter correlation is reduced when the effect of hopelessness is partialled out. On the basis of these findings it has been concluded that a person's negative view of the future, generally, but his feelings of hopelessness, specifically, are the important mediating variable between

depression and suicide.

On the basis of research findings thus far, it can be concluded that substantial evidence exists for the preponderance of negative content, pertaining to the cognitive triad, in the depressed individual's thinking. Beck, Rush, Shaw and Emery (1979) contend further that these cognitive patterns conceivably precede some of the other phenomena of depression.

What little research exists is supportive of this argument. Utilizing Velten's (1968) mood-induction procedure (autosuggestion technique, based on positive or negative self-referent statements), depressed mood was significantly and positively associated with social withdrawal and psychomotor retardation, (Hale & Strickland, 1976; Strickland, Hale & Anderson, 1975) and verbal production rate (Natale, 1977). A number of psychophysiological reactions, including galvanic skin response (Russell & Brandsma, 1974) and facial electromyographic activity (Sirota & Schwartz, 1982; Teasdale & Bancroft, 1977), for example, have been investigated to determine their relationship to negative cognitions. Results have indicated that there is a reliable and consistent association between a preceeding negative cognition and the psychophysiological reaction.

Cognitive Errors

According to Beck (1963; Beck, Rush, Shaw & Emery, 1979) a crucial characteristic of the cognitions with the

cognitive triad content is that they represent varying degrees of distortion of reality in the depressed person's thinking. The depressed individual shows a systematic error of thinking, which distorts incoming information and biases it in a negative direction against himself. Beck's typology of the cognitive errors present in depressives' thinking has been given and defined above, but is simply listed at this point to refresh the reader's memory: (a) selective abstraction, (b) arbitrary inference, (c) overgeneralization, (d) magnification and minimization, (e) personalization, and (f) absolutistic/dichotomous thinking. Thus far, little research has been conducted into the regularity of cognitive errors in depression proposed by Beck and will be reviewed at this point.

Among other findings, Rizley (1978) demonstrated that depressed subjects self-attributed more interpersonal influence, causality, and, marginally, more responsibility for another person's behaviour change than did nondepressed subjects. Furthermore, this was the case whether the other individual's behaviour changed in an evaluatively positive or evaluatively negative direction. This finding is consistent with Beck's notion of one type of cognitive error, personalization, whereby the depressed individual makes the undue inference that external events pertain to oneself.

Beck's typology of cognitive errors was investigated more explicitly by Hammen and Krantz (1976). As part of

their research focus, they scrutinized the differential responses of depressed and nondepressed college females on a measure of cognitive distortion, including instances of arbitrary inference, overgeneralization, minimization of the positive and maximization of the negative. Results indicated a significantly higher endorsement of depressed distorted responses for the depressed group by comparison with the nondepressed group. Interestingly, no differences were found between the groups in terms of nondepressed distorted endorsements, suggesting that distortions represent a qualitative difference in the cognitions of depressives.

Further validation of the measure used in the above study was carried out by Krantz and Hammen (1979). Administering the measure to depressed college students, depressed outpatients and depressed inpatients, the writers found a consistent relationship between depression and cognitive distortion, confirming Beck's affirmations of a characteristic bias of thinking in depression.

Working from a similar perspective, Lefebvre (1981) developed two cognitive errors questionnaires (CEQs). One was designed to measure cognitive errors related to general life experiences (General CEQ), while the other assessed the errors related to the limitations and problems experienced by chronic low back patients (LBP CEQ). Lefebvre studied a population of depressed psychiatric patients, depressed low back pain (LBP) patients, nondepressed LBP patients and

nondepressed individuals with no LBP. Generally, he found that depressed individuals with or without LBP showed significantly greater distortion on the General CEQ than nondepressed individuals, supporting Beck's contention of distorted thinking being a common and pervasive attribute of depressed individuals. Interestingly, there were differences on the LBP CEQ between the two groups of depressed subjects, with depressed LBP individuals catastrophizing, overgeneralizing, and selectively abstracting significantly more strongly than depressed subjects without LBP. This argues for a certain specificity associated with the idiosyncratic experiences of the individual, which runs parallel to the more general phenomenology of depression. In this sample, it would appear that LBP is out of the personal domain of the general depressed psychiatric patient. Although beyond the aim of the present paper, it would be enlightening to apply a similar assessment procedure to depressed cancer patients, depressed patients with coronary heart disease and other medical problems.

Depressive Schemata

It will be remembered that Beck's concept of depressive schemata assumes a central and critical role in his cognitive model of depression, as they are purported to mediate both the negative content of thought and systematic cognitive errors of the depressed individual. In addition, they are invoked to explain the activation and maintenance

of depression. However, as is the case concerning Beck's typology of cognitive errors, this concept has, until recently, been relatively neglected from an empirical viewpoint. What follows is a review of pertinent research, beginning with an overview of investigations into self-schemata generally, and concluding with a discussion of studies on the role of self-schemata in depression.

General. While initial applications of schematic concepts pertained to perceptual and general memory functioning, recent elaborations of the term have focused on the role of schemata in processing information about the self (e.g., Kendzierski, 1980; Markus, 1977; Rogers, Kuiper & Kirker, 1977).

Markus defines self-schemata as "cognitive generalizations about the self, derived from past experience" (p.64). Elaborating, she states that they are involved in the organization and processing of self-related information contained in the individual's social experiences. Empirical evidence for a broadly based self-schema was provided by Kendzierski (1980). Making use of the levels of processing paradigm for memory (Craik & Lockhart, 1972), she investigated the differential recall between tasks involving physical, semantic, situation-oriented and self-oriented information. According to this paradigm, the richer the existing information base involved in cognitive processing, the stronger the memory trace and subsequent retention. As predicted, self-oriented

information was better remembered than other types of information, a finding consistent with the notion that self-schemata summarize information across a wide range of situations and dimensions and, thus, have a richer, more varied information base than other knowledge structures. Kendzierski's results corroborated the findings of Rogers, Kuiper and Kirker (1977) and, together, the two lines of research suggested that Craik and Lockhart's (1972) depth of processing model contains a level of encoding deeper than semantic encoding, that of self-reference encoding. This is not surprising, for as Markus (1977) points out, a substantial, if not major, amount of information processed by an individual is information about the self.

While the above studies attest to the existence of a broadly based cognitive structure involved in processing information about the self, a certain specificity is also suggested. Writing about the nature of self-schemata, Markus (1977) notes that one of the main characteristics of these schemata is their selectivity in that they govern whether or not individuals attend to, how they structure, evaluate and deal with incoming information. Another feature of self-schemata is that, once established and with repeated experiences of a certain kind, they are increasingly refractory to inconsistent or contradictory information. Furthermore, self-schemata go beyond being merely storage pools of organized representations of past behaviour. Rather, the categorization and organization of

information about the self results in a discernible blueprint, which is utilized by the individual in making future judgements, decisions, inferences or predictions about the self.

To test the domain specific nature of self-schemata, Markus (1977) employed a number of empirical referents in her study of individuals with and without self-schemata along the independence-dependence dimension. Results indicated that self-schemata facilitate the processing of information about the self, contain easily retrievable behavioural evidence, provide the basis of confident self-predictions of behaviour on schema related dimensions, and make individuals resistant to counterschematic information. Overall, a high degree of consistency among the various tasks attested to a well-articulated cognitive structure utilized in the selection and processing of information about the self. If such consistency were found on the dimension of depression, it would lend considerable support for Beck's assertion of a negative self-schema in depression.

Closer to the thrust of the proposed study is the investigation of emotional influences on diverse cognitive processes by Bower and his associates (e.g., Bower, 1981; Bower, Gilligan & Monteiro, 1981). In an attempt to rationalize findings from his research endeavours, Bower (1981) has advanced a theoretical framework that views an emotion as a unit within a semantic network that encodes

memories. It is assumed that a dominant emotion enhances the availability of emotion-congruent interpretations and the salience of emotional stimuli in the environment that agree with the perceiver's state. Results from a number of experiments (Bower, Gilligan & Monteiro, 1981) demonstrated that readers learned more mood congruent than mood-incongruent incidents, but did not learn more about the mood-congruent character. Thus, rather than identifying exclusively with the same mood character, subjects selectively learned whatever affective material (sad versus happy) was congruent with their emotional state. In an attempt to explain these results further, the authors invoked additional hypotheses. One was that mood-congruent material is more memorable because it elevates the intensity of the subject's feelings, whereas mood-incongruent material diminishes mood intensity. A second was that mood-congruent material may be more likely to remind the reader of a similar experience, and thus promote learning. Although no connection was made between these results and Beck's statements on depression, it is argued here that the above data are corroborative of Beck's model of depression. As Thorndyke and Yerkovich (1980) state, it is possible to remember a single story in different ways, that is, by invoking different schemata. Further, this appears to be dependent on the reader's perspective, interests and orientations. And a depressive perspective with regard to self, environment and future lies at the core of Beck's

theory of depression.

Specific. Davis (1979-a) was among the first to question whether or not a negative self-schema is a regular symptom of depression. He proposed that a negative self-schema is a function of the duration of depression, becoming more organized and consistent over time. Employing the incidental recall paradigm, he expanded it to include information processing of personal adjectives in addition to structural, phonemic and semantic qualities as in the work of Rogers and associates (e.g., Rogers, Kuiper & Kirker, 1977). Davis found that clinically depressed individuals showed relatively low memory for personal adjectives when compared with non-depressives. Additionally, the hypothesis that the strength of the self-schema develops with duration of depression was confirmed. These results were replicated with a population of short-term depressed college students (Davis, 1979-b). To further test the developmental self-schema model in depression, Davis and Unruh (1981) assessed the subjective organization (SO) in multitrial free recall (Tulving, 1962) of self-descriptive adjectives. SO is considered to be a direct method for assessing the operation of a schema as it is assumed that words coded together in a subjective unit (i.e., a schema) tend to be recalled contiguously. Degree of schematic processing is thus reflected in the individual's organization in memory. Comparison of short-term depressives with long-term depressives revealed that the former showed the lowest

levels of SO. The authors concluded that the self-schema possibly starts as a strong personal information processor before it is weakened by the change in self-referents that accompanies the onset of depression. During this phase, many terms used in self-description are replaced by new ones. Over time, however, the schema reorganizes and regains its strength as an information processor.

A serious limitation of Davis' research has been highlighted by Derry and Kuiper (1981). They interpret the absence of an operational self-schema in short-term depressives as reflecting the fact that no attempt was made to distinguish between adjective content. Davis has repeatedly utilized the same set of nonpathological personal adjectives. However, in Beck's conceptualization, the devaluation of self is one of the hallmarks of depression. Accordingly, negative self-references indicating personal deficits as well as value judgements concerning worthlessness or personal incompetence prevail. It appears, therefore, that the content of self-referent statements is important in order to tap a depressive self-schema. While endorsing Derry and Kuiper's criticism of Davis' work, the present author would like to elaborate on it by questioning the type of schematic processing evidenced by Davis' long-term depressives. As Davis did not utilize any depressive personal adjectives, the high levels of SO shown by his long-term depressives suggests the activation of a non-depressive self-schema. This, in fact, weakens Beck's

proposition of an overactive and prepotent negative self-schema in depression.

To rectify this procedural flaw, Derry and Kuiper (1981) manipulated the content (depressive versus non-depressive) of the personal adjectives presented to groups of clinically depressed patients, nondepressed psychiatric controls and normal nondepressed individuals. Working from a content-specificity hypothesis, the authors contended that if depressives possess an integrated self-schema specific to depressed content, then the usual recall superiority of self-referent encodings may obtain only for depressed content in depressed patients. Generally, they found that self-referent material was remembered more effectively than structural or semantic tasks. Furthermore, normals and nondepressed psychiatric controls revealed a superiority of recall of self-referent nondepressive material, while depressed individuals displayed significantly enhanced recall only for depressive self-referential adjectives. The authors interpreted the findings as strong empirical support that a negative self-schema exists for depressives, as asserted by Beck.

In addition to asserting that a depressive self-schema operates in depression, Beck also characterizes it as a relatively enduring anomaly in the depressive's psychological system, lying dormant until a particular set of circumstances (e.g., loss of a loved one) activate it. In one study, Lunghi (1977) demonstrated that compared with

non-depressives depressed individuals' self-ratings and evaluations of both real life and imaginary social relationships were more negative. More importantly, however, Lunghi found that, although depressives had improved on the depression measure at the time of discharge, their self-evaluations and social perceptions remained negative. It would appear, therefore, that a particular negative cognitive style characterizes individuals who have remitted from depression and endures, moreover, in the absence of depressed mood. It will be recalled also that Hauri (1976), in his investigation of dreams in patients remitted from depression, found that their dreams continued to be atypical relative to the control group. He concluded that these atypical aspects formed a logical, coherent pattern consisting of allusions to a hosile environment, an excessive preoccupation with the past, labile affect and masochism.

While the above studies are congruent with Beck's contention of depressive schemata as relatively enduring cognitive characteristics, a most recent investigation by Hamilton and Abramson (1983) attempted to investigate this issue explicitly. Using a longitudinal design, these authors examined the question of whether or not the cognitive patterns exhibited by inpatient depressives persist beyond remission of the current depressive episode and therefore qualify as traitlike cognitive styles rather than as correlates or consequences of the depressive episode

itself. Their results show that, contrary to predictions from Beck's theory, the depressives showed dramatic improvement on all of the cognitive measures as their depression remitted. Furthermore, their data suggested that not all of the individuals exhibited Beck's hypothesized depressive cognitive profile during their depressive episode, indicating that unipolar depressive disorder, episodic and nonpsychotic type, is likely heterogenous with respect to cognitive patterns.

To integrate the evidence thus far, research evidence gathered to date strongly supports Beck's notion of a cognitive triad in depression, which consists of a negative view of self, one's world and experience, and the future. In addition, reliable grounds exist to assert the existence of a rich and broad base of knowledge that organizes and guides the processing of self-referential information. This cognitive structure is referred to as a self-schema. Furthermore, a depressive schema has been shown to operate in instances of depression. Finally, the presence of characteristic cognitive errors in depression has been documented.

Before addressing the purpose of the present study, a brief review of research on the relationship of depression and memory is in order, as the study employs a memory research paradigm to evaluate particular aspects of Beck's cognitive model of depression.

Memory and Depression

A number of different aspects of memory functioning have been studied in depressed populations. Henry, Weingartner and Murphy (1973) compared the performance of patients diagnosed as unipolar or bipolar depressives on a serial-learning task. They found that for both groups the severity of depression did not influence their performance on the first trial of the serial-learning task and concluded, on the basis of these data, that depression is not associated with impairment in short-term memory. By contrast, however, both groups of depressives exhibited a significant decline in performance on later trials of the serial-learning task on days when they were more depressed, with this impairment being more pronounced in the unipolar depressives. In addition, depression also interfered with performance on a free-recall task, but only in the unipolar depressed group. Henry and his associates concluded that depression interferes with the transfer of information from short-term to long-term storage.

Somewhat contradictory findings were obtained by Sternberg and Jarvik (1976). Attempting to elucidate the nature of memory deficit in depression, the authors assessed both short-term and long-term memory performance in a group of hospitalized depressed patients, comparing them with a matched control group, free of current mental or physical illness. Their results indicated that depressed individuals showed marked impairment in short-term memory without an

impairment in long-term memory. Further corroboration of this finding was provided by the fact that, following improvement in the clinical state of these patients, there was a concomitant improvement in short-term memory, whereas long-term memory did not show such a parallelism.

A number of writers have hypothesized that the memory deficit evidenced in depression may be the result of incomplete encoding strategies. For example, Russell and Beekhuis (1976) compared schizophrenics and depressives to normals on a multitrial free recall task. Both groups of patients exhibited inferior recall clustering, relative to normals. The authors concluded that these patient groups were unable to impose any organizational structure on the to-be-remembered material, thus impairing subsequent memory performance. In a similar vein, Weingartner, Cohen, Murphy, Mortello and Gerdt (1981), utilizing a depth of processing memory paradigm (Craik & Lockhart, 1972), found that the recall performance of clinical depressives did not benefit from semantic encodings. That is, although the depressives performed as well as normals in remembering acoustically processed information, their performance was markedly deficient, relative to the normals, for those processing conditions requiring the use of more elaborate encoding operations. However, they also found that providing the depressives with organization and structure eliminated the memory deficit.

The organizational memory deficit suggested by the

above studies may not be a generalized deficit, but rather applicable to only specific kinds of to-be-remembered material, as, for example, in the study by Weingartner and his associates (1981), utilizing concrete nouns. By contrast Derry and Kuiper (1981) demonstrated that clinical depressives did not display a free recall memory deficit for self-referenced content adjectives. Moreover, depressives recalled approximately four times as many depressed content adjectives as normals. The self-referenced free recall task utilized by Derry and Kuiper is employed in the present study, and, thus, no memory deficit is expected with respect to this task.

In conclusion, it would appear that research results and conclusions of various authors regarding memory deficit in depression are characterized by discrepancies. It could be, as Miller (1975) states, that depressives' reduced motivation or inability to sustain motivation may account for the memory deficit in particular instances of depression.

Purpose of the Study

As noted in the introduction, in addition to further demonstrating the operation of a depressive self-schema, the primary focus of the present study is Beck's assertion of schema-mediated cognitive distortion in depression. To the best of the author's knowledge, this relationship has not been investigated and is, thus, presently examined.

Of additional concern to the objectives of the study is

Beck's notion of the developmental nature of the depressive self-schema. Beck argues that such a schema becomes more potent and all inclusive, interfering with the utilization of more appropriate schemata in processing incoming information, the longer the duration of the depression. Essentially, this constitutes the difference between short-term and long-term depression, whereby the development of the depressive self-schema is considered within the context of a single depressive episode. However, Beck also states that it would be implausible to assume **de novo** creations of aberrant cognitive mechanisms with each depressive episode. Rather, the notion of a relatively enduring anomaly in the depressive's psychological system presents as more credible. Thus, when a depressive episode is precipitated, a set of dysfunctional schemata formed at an earlier time become activated. Viewed from this perspective, the development of a depressive self-schema can be considered within the context of repeated depressive episodes. This idea is consistent with data from research on more general memory schemata, according to which schemata become increasingly resistant to inconsistent or contradictory information, as individuals accumulate repeated experiences of a certain kind. It is proposed here that differences exist between first episode depressives and repeated episode depressives in terms of their depressive self-schema, and that corroboration of such differences will add to the strength of Beck's conceptualization of

depression. This proposition will be tested utilizing a selected sub-sample of the group of depressives, who are contrasted generally, with a normal control group.

The study concentrates on depressives drawn from a clinical population. The rationale for this stems from work that hypothesizes and has actually documented differences between clinical depressives and depression in normals. As Depue and Monroe (1978) point out, it is not clear whether nonclinical depressed individuals are qualitatively equivalent to their clinical counterparts. Accordingly, a number of the above studies (Davis, 1979-a, 1979-b; Krantz and Hammen, 1976) may be critized for the inclusion of college depressed subjects in their study. Furthermore, much of the research cited by Beck et al. (1979) in support of his theory has also utilized college populations. It would seem that, for Beck's theoretical model to be truly applicable and explanatory of clinical depression, its major postulates need to be examined with clinically depressed populations.

CHAPTER 4

Method

Subjects

For the depressed group, subjects were inpatients in the psychiatric section of a general hospital. Initial screening of prospective participants in the study involved a careful study of case files in order to select individuals with a primary diagnosis of unipolar depression at intake. This initial screening procedure also served the purpose of separating the depressed subjects into two groups, first episode depressives (FED) and repeated episode depressives (RED). Only the protocols of those depressed patients were utilized in the study whose discharge diagnosis was also one of primary depression.

To ensure further reliability of subject selection, additional assessment criteria were employed. These included the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock & Erbaugh, 1961) and the Depression Scale of the Minnesota Multiphasic Personality Inventory (MMPI (D); Hathaway & McKinley, 1951). Inclusion in the depressed group was based on the following: (a) a BDI score of 10 or greater, and (b) a true score of 70 or above on the MMPI (D). A total of 42 depressed patients were selected for the study, including 14 males and 28 females. The mean age of the depressed sample was 39.25 (range: 19.58 - 69.50).

An attempt was made to run the depressed subjects

through the research procedure as soon as possible following their admission to the hospital. At the time of assessment, all but two of the depressed subjects were receiving antidepressant medication, and none had received electroconvulsive therapy in the six months prior to hospitalization.

The nondepressed control group consisted of hospital employees, excluding medical personnel, but including members of the nursing, secretarial, maintenance, housekeeping and social services staff. It was assumed that sampling from these various populations would increase the representativeness of the sample, rendering it comparable to the general, non-hospitalized population. These normal controls were considered initially for the study following a self-report of good physical and emotional well-being. Final inclusion in the control group was based on the following: (a) a BDI score less than 10, and (b) a true score below 70 on the MMPI(D). A total of 42 normal non-depressed control subjects were selected for the study, including 12 males and 30 females. The average age of the nondepressed sample was 38.73 (range: 24.00 - 63.50).

Regarding the inclusion criteria, researchers utilizing the BDI have varied in the selection of a cut-off score, ranging from as low as 9 and as high as 16. This decision would seem somewhat arbitrary and for the present study a score of 10 was chosen as the discriminator between the two groups, this score being indicative of the presence of

depression of mild proportions. This criterion was considered adequate especially as subjects were required to meet the additional MMPI (D) criterion of a true score of 70. A score of 70 or above on the MMPI (D) is two standard deviations above the mean. In clinical practice, a true score of 70 or above is generally deemed to be indicative of significant depression.

Materials

Beck Depression Inventory (BDI). The BDI appears to be one of the best self-report instruments available for measurement of depression severity. It consists of 21 items, selected to represent depressive symptoms, with each item composed of four statements listed in order of symptom severity. Item categories include mood, pessimism, crying spells, guilt, self-hate, self-harm, sense of failure, self-dissatisfaction, social withdrawal, work inhibition, sleep and appetite disturbance. In scoring the inventory, each statement is assigned an empirical weighting factor from 0 to 3. The odd-even reliability has been reported as .86, and the test-retest reliability as .75 after 1 month and .74 after 3 months. Concurrent validity studies on the BDI have yielded coefficients ranging from .19 to .57, with a mean for the studies reviewed of .54. High discriminant validity, with a correlation of .72 between the BDI and clinical ratings of depression, and a correlation of only .14 between the BDI and clinical ratings of anxiety, has been demonstrated. The construct validity of the BDI has

also been supported.

Minnesota Multiphasic Personality Inventory, Depression Scale (MMPI(D)). The MMPI is the most widely used psychodiagnostic instrument available and one of the most widely studied psychometrically. The depression (D) scale is composed of 60 true/false items, wherein 11 were chosen on the basis of discriminating between depressed patients and other psychiatric patients, and the remaining 49 items were chosen on the basis of discriminating between a normal group and a group of manic-depressives, depressed type. The median split-half reliability on the D scale is .73, with the mean concurrent validity given as .33. The D scale has been criticized for its heterogeneity and multidimensionality, as well as for the fact that items from the scale also appear on other clinical scales, thus reducing its discriminant validity. Nevertheless, the MMPI(D) was included in the present study as it is frequently utilized both for clinical and research purposes.

Wechsler Memory Scale (WMS). The WMS (Wechsler, 1945) was included in order to obtain a measure of intellectual functioning, generally, and memory functioning, specifically, in the two groups of subjects. It was important also to incorporate a measure of general memory in the design in order to rule out the possible effects of a general memory factor on the performance of the D and ND subjects on the free recall task, aimed at establishing the presence of a depressive self-schema. The WMS consists of 7

subtests, yielding a total raw score. This total score has a correction for age and ultimately yields a memory quotient (MQ). The MQ was designed to be directly comparable to the Wechsler-Bellevue intelligence quotient. The WMS was standardized on approximately 200 normal subjects, ages 25 to 50, men and women, and has an estimated reliability coefficient of about .83 for clinical populations (Newman, 1953).

Depressive self-schema measure. In order to assess the depressive self-schema, the levels of processing paradigm (Craik and Lockhart, 1972) was employed to test the differential recall and recognition of depressed versus nondepressed adjectives. For a critique of the depth of processing paradigm of memory the reader may consult Baddeley (1978). The set of stimuli of 60 personal adjectives differentiated on the basis of depressed (30 adjective) versus nondepressed (30 adjectives) content were those utilized in Derry and Kuiper's (1981) study. In arriving at the final set of stimuli, the authors ensured that no overlap on content ratings for the two types of adjectives were present, and that the words were matched in terms of imagery, social desirability and emotionality ratings. These issues are discussed in detail in their write-up of the initial norming study (Derry and Kuiper, 1979).

The 60 adjectives were fashioned by the author into a questionnaire, called the Word Rating Questionnaire (WRQ)

(see Appendix A). The WRQ was constructed in such a way that the word to be rated was followed by a question, cueing the subject to process the word either structurally, semantically or self-referentially. In addition, for every block of 6 words, 3 words were depressed in content, and 3 words were non-depressed in content. Furthermore, within the block of 6 words, 2 were cued for structural, 2 for semantic and 2 for self-referential processing. Finally, with respect to the two structural and two semantic ratings within each block of six words, one required a yes response and one a no response.

The structural task required the subject to simply rate whether or not the word was printed in "small or capital letters." For the semantic task, the subject was asked to rate whether or not the word meant the "same as another word." Finally, in the self-referential task, the subject was required to rate whether or not a given word "described him." With respect to the semantic task, a list of synonyms was chosen from Webster's New Collegiate Dictionary (1973) and the degree of congruence between the depressed/non-depressed content words and words on the synonym list was pre-tested on a sample of 20 individuals from various walks of life. The purpose of this was to ensure that the list of synonyms was generally considered synonymous with the depressed/nondepressed adjectives.

Three different, randomized orders of word lists were constructed to ensure that each word received a structual, a

semantic and a self-referential rating. Three additional lists were generated to ensure that each word received both a yes and a no rating for the structural and semantic tasks. Thus, 6 different forms of the WRQ were utilized.

For the recognition task, the 30 depressed content and 30 nondepressed content adjectives were typed in large script on a set of 3" x 5" white cards together with 60 filler adjectives equally divided into positive and negative content. The filler adjectives were again drawn from a pool of words derived from Webster's New Collegiate Dictionary (1973) following a pre-test on a sample of 20 individuals from various walks of life.

Cognitive Errors Questionnaire (CEQ). The operation of cognitive distortion was ascertained via the general CEQ constructed by Lefebvre (1981) (see Appendix B). The questionnaire consists of 24 short vignettes followed by a dysphoric cognition about the vignette that reflects a cognitive error. Subjects are asked to rate how similar the cognition is to the thought that they would have in a similar situation on a 5-point scale. A broad range of life situations is tapped (family/home, work, recreation activities). The Scoring Key is provided in Appendix C.

Initial validation of the questionnaire was unable to differentiate the seven cognitive errors outlined by Beck and his associates (Beck, Rush, Shaw & Emery, 1979). After a redefinition of the errors, raters were able to categorize the vignettes according to a new set of four cognitive

errors. These errors include: (a) catastrophizing, anticipating that the outcome of an experience will be catastrophic or misinterpretation of an event as a catastrophe, (b) overgeneralization, drawing a general rule or conclusion on the basis of one or more isolated incidents and applying the concept across the board to related and unrelated situations, (c) personalization, taking personal responsibility for and relating external events to self where there is no basis for making such a connection and (d) selective abstraction, focusing on a detail (negative) taken out of context, ignoring other more salient features of the situation and conceptualizing the whole experience on the basis of this fragment.

The test-retest reliability, alternate forms reliability and internal consistency are given as .90 to .85, .76 to .82 and .89 to .92, respectively. Concurrent validity was .52 to .60 when compared with a similarly constructed distorted cognitive scale (Hammen & Krantz, 1976).

Procedure

Data were collected between April and September of 1983. Case files were reviewed in order to select the subjects for the depressed group. The subjects for the control group were approached directly by the author. Each subject was tested individually in a quiet room of the hospital by either the author or a trained assistant. The stated purpose of the study was explained as an attempt to

discover how depressed and non-depressed individuals perform on particular cognitive tasks. In all cases, participation was voluntary and the subjects were free to withdraw at any time during the assessment procedure. The actual assessment procedure began with an administration of the BDI and the MMPI(D), and only those individuals meeting the preselected criteria of depression outlined above were included in the study. Next, the subjects were asked to complete the WRQ, followed by a recall and then by a recognition task of the depressed and non-depressed content words. After a brief rest period, the subjects were administered the WMS. The assessment concluded with the subjects completing the CEQ. Upon completion of the assessment procedure all subjects were fully debriefed and thanked for their co-operation.

Statistical Hypotheses

1. Self-reference. Of relevance to the strength of a depressive self-schema are possible differences in actual self-perception between the two groups of individuals. In this regard it is predicted that:

a) D will endorse more depressed content adjectives as self descriptive compared with like endorsement of nondepressed content adjectives.

b) ND will endorse more nondepressed content adjectives as self descriptive compared with like endorsement of depressed content adjectives.

2. Strength of depressive self-schema. A number of

predictions are made to test for differences between depressed (D) and nondepressed (ND) individuals with respect to the strength of a depressive self schema, as measured through recall and recognition data:

c) D individuals will recall and recognize a significantly greater number of self-referent depressed content adjectives than ND individuals.

d) D individuals will recall and recognize significantly fewer self-referent nondepressed content adjectives than ND individuals.

e) D individuals will show superior recall and recognition of self-referent depressed content adjectives compared with their recall and recognition of self-referent nondepressed content adjectives.

f) ND individuals will demonstrate superior recall and recognition of self-referent nondepressed content adjectives compared with their recall and recognition of self-referent depressed content adjectives.

3. Cognitive distortion. With regard to differences between D and ND in terms of propensity to commit cognitive errors the following is predicted:

g) D will demonstrate higher scores on all components of the CEQ compared with their ND counterparts.

4. Relationship of depressive self-schema to cognitive distortion. In terms of a possible association between a depressive self-schema and cognitive distortion a number of predictions are formulated:

h) The recall and recognition of depressed content adjectives will be positively associated with CEQ scores.

i) The recall and recognition of nondepressed content adjectives will have an inverse relationship with CEQ scores.

j) Level of cognitive distortion as measured by the CEQ, will be associated with differential recall of depressed and nondepressed content adjectives.

5. Depth of processing. The basic self-referent processing effect predicts that self-referent material will be recalled to a greater degree than semantically processed material, which in turn will yield superior recall compared with structurally processed material. Thus, with regard to the utilization of different cues to process the list of adjectives it is predicted that:

k) D will show the basic self-referent processing effect, but only with depressed content adjectives.

l) ND will show the basic self-referent processing effect, but only with nondepressed content adjectives.

6. Comparison of FED's and RED's. With regard to possible differences between FED's and RED's in terms of their self-schema and cognitive distortion, the following predictions are made:

m) FED's will obtain lower recall and recognition of depressed content adjectives than RED's.

n) FED's will demonstrate superior recall and recognition of nondepressed content adjectives compared with RED's.

o) RED's will obtain higher scores on the CEQ than FED's.

For the above hypotheses, the level of significance is set at $p<.01$.

Statistical Analysis

The principal statistical procedure employed to test the significance of the above predictions was that of repeated measures Analysis of Variance. This analysis was applied to test for differences in depressive self-schema and self-perception between the two groups, to evaluate the association between a depressive self-schema and cognitive distortion and to test for the predicted depth of processing effect specified above. Pearson product moment correlations were calculated to provide additional information primarily regarding the relationship of depressive self-schema to cognitive distortion. Differences in cognitive distortion between the two groups were assessed using the Hotelling T^2 statistic. In

one instance an Analysis of Covariance was employed to determine the possible influence of a general memory factor on the self-schema measure (i.e., recall of adectives). Finally, the two independent sample t-test was utilized to test for differences between FED's and RED's in terms of a depressive self-schema and cognitive distortion, and to test for differences in group characteristics between D and ND individuals.

CHAPTER 5

Results

This chapter will deal with the outcomes of statistical analyses performed on the data. Initial consideration will be given to comparisons, utilized to determine potential differences in group characteristics between the depressed (D) and nondepressed (ND) samples. Next, the tendency of depressives and nondepressives to endorse either depressed or nondepressed self referent descriptors will be examined. Comparisons of differences in depressive self-schema and cognitive distortion between the two groups will follow, together with an examination of the strength of the relationship between this schema and distortion. Finally, possible variations in depressive self-schema and cognitive distortion between first episode depressives and repeated episode depressives will be scrutinized.

Group Characteristics

Differences between the depressed (D) and nondepressed (ND) groups were compared on the variables of age, BDI, MMPI (D), and WMS, using the familiar two independent samples t-test. The results of these comparisons are presented in Table 2.

Thus, separate t-test comparisons yielded no statistically significant differences in terms of age, but confirmed significant group differences for both depression measures and for the index of general memory efficiency. Differences in level of depression were expected, for

TABLE 2

Group Characteristics for
D and ND samples

	D (N = 42)		ND (N = 42)				
Variable	Mean	SD	Mean	SD	df	t	p
age	39.25	13.83	38.73	12.12	82.00	0.18	0.854 (NS)
BDI	29.64	9.62	2.95	2.22	45.35	17.51	0.001 (S)
MMPI (D)	89.71	12.76	49.57	7.52	66.42	17.57	0.001 (S)
WMS	102.36	17.59	115.62	15.45	82.00	-3.67	0.001 (S)

inclusion in the groups was based on severity of depression as measured by the BDI and MMPI (D). The confirmation of statistically significant differences between the two groups with respect to WMS scores was consistent with previous research (e.g., Breslow, Kocsis & Belkin, 1981) and indicated that the effects of a general memory factor warranted examination in later analyses of recall performance of D and ND subjects.

Before leaving the discussion of group characteristics, a brief mention will be made of the relationships between the above variables. Calculations of Pearson product-moment correlation coefficients among these measures for the total sample revealed that the relationship between age and levels of depression and general memory efficiency, as measured by the BDI, MMPI (D) and WMS, respectively, was insignificant. By contrast, a moderate negative relationship existed between the WMS scores and the BDI ($r = -.35$, $p < .001$) and MMPI (D) ($r = -.35$, $p < .001$). Finally, the correlation between BDI scores and MMPI (D) scores was highly significant ($r = .84$, $p < .001$). However, when separate correlations were run for D and ND groups, correlations between WMS and BDI (D group: $r = -.11$, $p > .50$; ND group: $r = .19$, $p > .22$), WMS and MMPI (D) (D group: $r = -.06$, $p > .71$; ND group: $r = .00$, $p > .97$), and BDI and MMPI (D) (D group: $r = .25$, $p > .10$; ND group: $r = .21$, $p > .17$) were considerably reduced.

This turn of events is readily understood. Most

obviously, the magnitude of the correlations for the total sample was influenced by the artificial separation of BDI and MMPI (D) scores due to criteria utilized to sample for D and ND subjects. When considering separate correlations for the two groups, the reduction of the magnitude of the correlations is due, in large measure, to the restriction of the range of BDI and MMPI (D) scores.

From a clinical standpoint, it would seem more meaningful to view relationships among different factors for the two groups separately. Presently, results of the correlational analysis indicated that, for both depressives and nondepressives, general memory efficiency tended not to be associated in any consistent way with level of depression. Similarly, the degree of relation between the two depression measures was small for both samples, accounting for only 4% of the variance.

Self-Reference

Hypotheses:

a) D will endorse significantly more depressed content adjectives than nondepressed content adjectives as self-descriptive.
b) ND will endorse significantly more nondepressed content adjectives than depressed content adjectives as self-descriptive.

In the self-referential task, subjects could endorse a maximum of 10 depressed-content and 10 nondepressed-content adjectives as describing them. In order to assess the degree to which the two groups of individuals viewed these adjectives as self-descriptive, a repeated measures Groups x

Content (repeated) ANOVA was performed on self-descriptive ratings receiving a positive endorsement. Table 3 contains the results of this analysis, demonstrating significant main effects of groups, content, and Groups x Content interaction. More specifically, depressives made more self-referent yes Ratings (M = 6.13) than non-depressives (M = 3.94), and non-depressed content adjectives received significantly more yes ratings (M = 6.59) than depressed-content adjectives (M = 3.48). More importantly, the Groups x Content interaction revealed that depressives endorsed significantly more depressed-content adjectives (M = 6.73) than nondepressed content adjectives (M = 5.52), while nondepressives made significantly more yes ratings to nondepressed-content (M = 7.67) than depressed-content adjectives (M = 0.21), with the nondepressed group contributing most to the magnitude of this interaction (see Figure 3). Overall, these analyses indicate that there are significant differences in self-perception between depressives and nondepressives.

Supporting the results of the above interaction was correlational evidence of a significant moderate relationship between level of depression, as measured by the BDI, and endorsement of self-descriptive adjectives for both groups of individuals. The nature of this relationship was such that the deeper the level of depression, the greater the tendency to endorse depressed-content adjectives (D group: $r = .56$, $p < .0001$; ND group: $r = .47$, $p < .0001$)

TABLE 3

Groups x Content ANOVA for self-referent yes ratings

Source	df	Mean Squares	F	p
1. Groups	1	201.52	69.94	0.001 (S)
1. S-Within	82	2.88		
2. Content	1	408.59	76.02	0.001 (S)
Groups x Content	1	788.67	146.73	0.001 (S)
2. S-Within	82	5.37		

N: D = 42, ND = 42

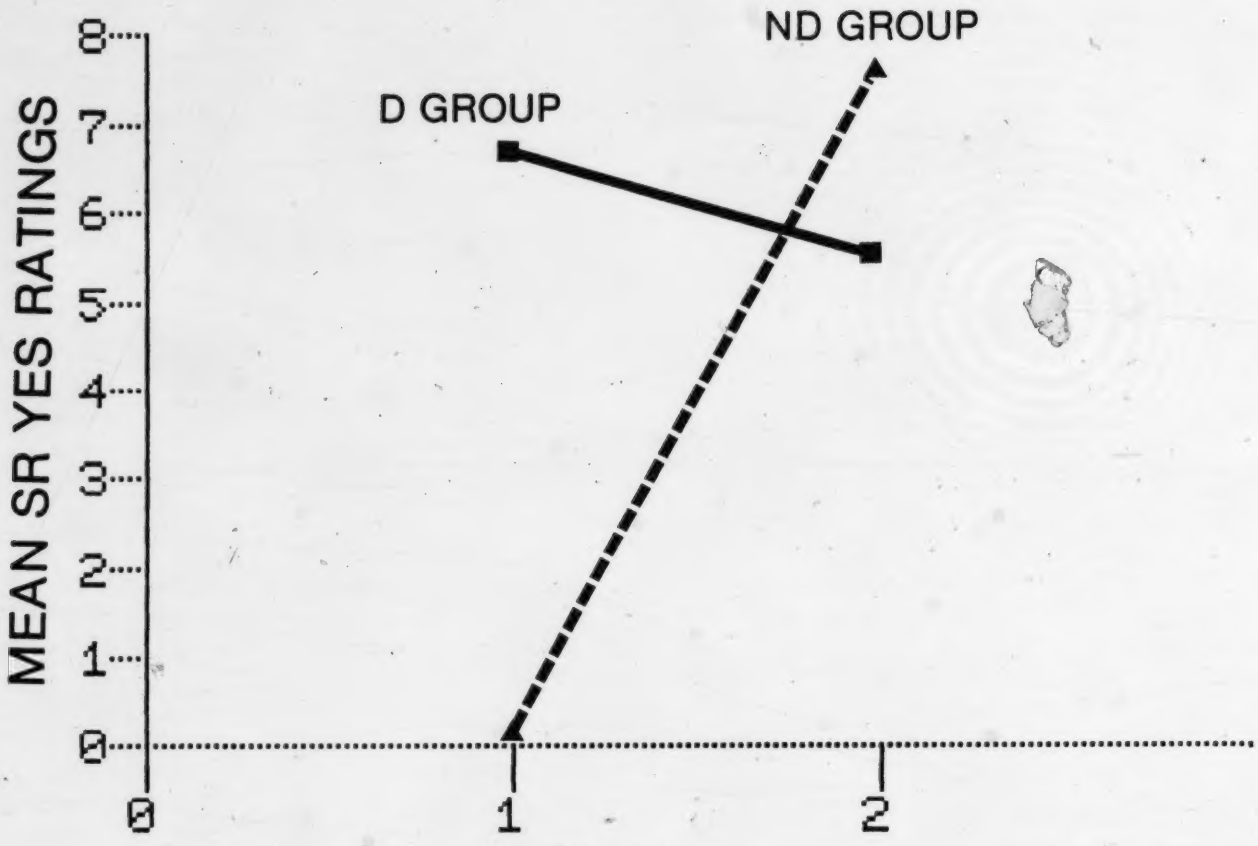

Figure 3. Mean self-referent yes rating as a function of group membership and content of self-reference.

Note: DC = depressed content; NDC = nondepressed content

and smaller the likelihood of endorsing nondepressed-content adjectives (D group: $r = -.47$, $p < .002$; ND group: $r = -.52$, $p < .0001$).

Depressive Self-Schema and Depth of Processing

Hypotheses:

c) D individuals will recall and recognize a significantly greater number of self-referent depressed content adjectives than ND individuals.
d) D individuals will recall and recognize significantly fewer self-referent nondepressed content adjectives than ND individuals.
e) D individuals will show superior recall and recognition of self-referent depressed content adjectives compared with their recall and recognition of self-referent nondepressed content adjectives.
f) ND individuals will demonstrate superior recall and recognition of self-referent nondepressed content adjectives compared with their recall and recognition of self-referent depressed content adjectives.
k) D will show the basic self-referent processing effect, but only with depressed content adjectives.
l) ND will show the basic self-referent processing effect, but only with nondepressed content adjectives.

A number of different analyses were performed in order to evaluate the differential significance of a depressive self-schema in the D and ND groups. First, a repeated measures Groups x Content (repeated) x Rating Task (repeated) ANOVA was performed on the recall data. Results of this analysis are provided in Table 4.

As can be seen, with the exception of Groups x Rating Task interaction (see Figure 4), all other main and interaction effects were significant. Thus, nondepressives recalled significantly more adjectives ($M = 1.12$) than

TABLE 4

Groups x Content x Rating Task ANOVA
for recall of adjectives

Source	df	Mean Squares	F	p
1. Groups	1	10.86	8.18	0.005 (S)
1. S-Within	82	1.33		
2. Content	1	9.72	8.39	0.005 (S)
Groups x Content	1	10.27	8.88	0.004 (S)
2. S-Within	82	1.16		
3. Rating Task	2	48.16	58.18	0.001 (S)
Groups x Rating Task	2	0.81	0.98	0.377 (NS)
3. S-Within	164	0.83		
4. Content x Rating Task	2	6.11	7.42	0.001 (S)
Groups x Content x Rating Task	2	5.90	7.17	0.001 (S)
4. S-Within	164	0.82		

N: D = 42; ND = 42

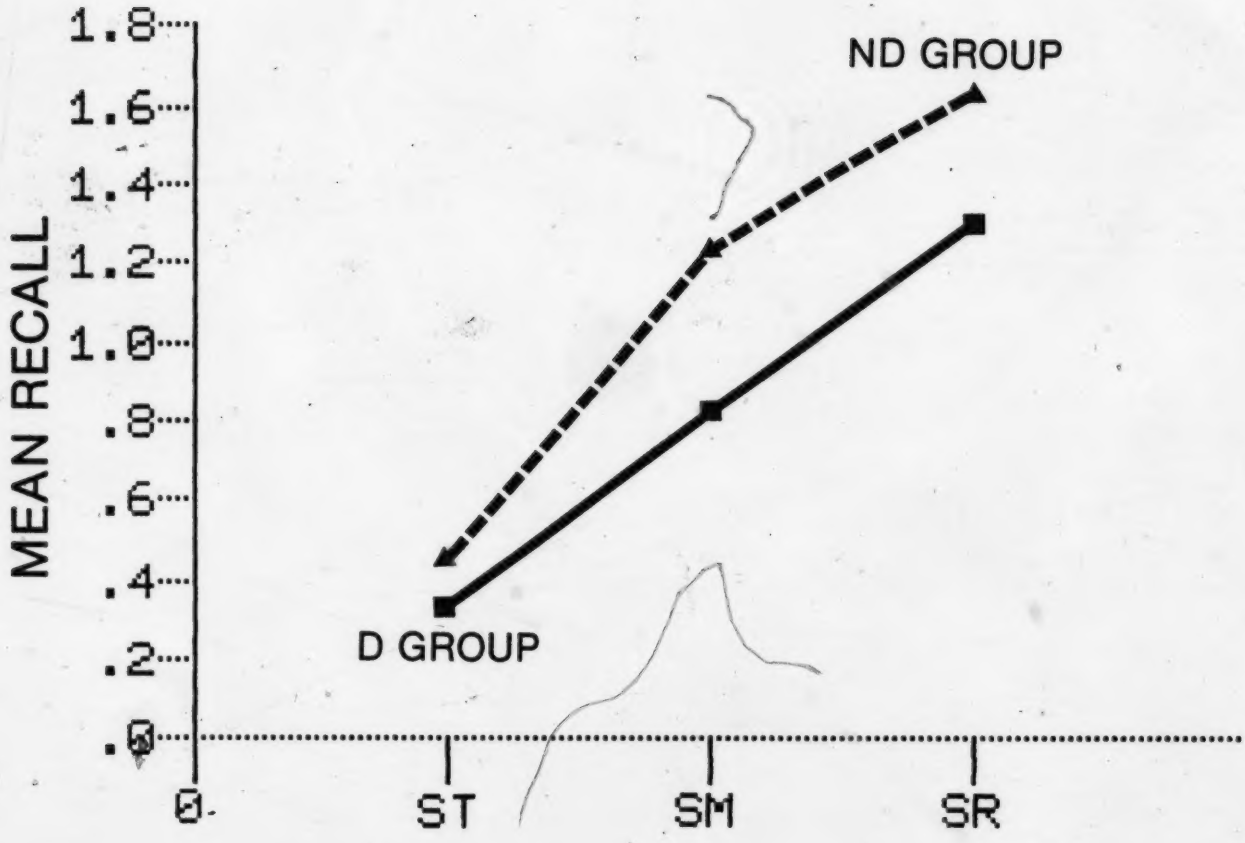

Figure 4. Mean recall of adjectives as a function of group membership and type of rating task.

Note: ST = structural; SM = semantic; SR = self-referential

depressives (M = 0.82), recall of nondepressed content (M = 1.11) was significantly greater than recall of depressed content (M = 0.83), and recall was highest for the self-referential (M = 1.47), middle for the semantic (M = 1.03), and lowest for the structural (M = 0.41) tasks. In terms of interaction effects, depressives were just as likely to recall depressed-content adjectives (M = 0.83) as nondepressed content adjectives (M = 0.82), but nondepressed individuals recalled a significantly greater number of nondepressed content adjectives (M = 1.40) than depressed content adjectives (M = 0.83) (see Figure 5). With regard to the interaction between type of content and type of rating task, the most notable finding was that self-referentially processed nondepressed material (M = 1.82) was recalled to a significantly greater degree than depressed material (M = 1.12) processed in a similar fashion (see Figure 6).

The most important finding, of course, is the significant three way interaction between groups, content and rating task (see Figure 7). In this instance, the basic depth of processing self-referent effect was demonstrated with self-referentially processed material generally yielding superior recall to semantically processed material, the latter, in turn, yielding superior recall to structurally processed material, irrespective of the content of such material. Interestingly, depressives demonstrated this self-referent effect over both types of content, while

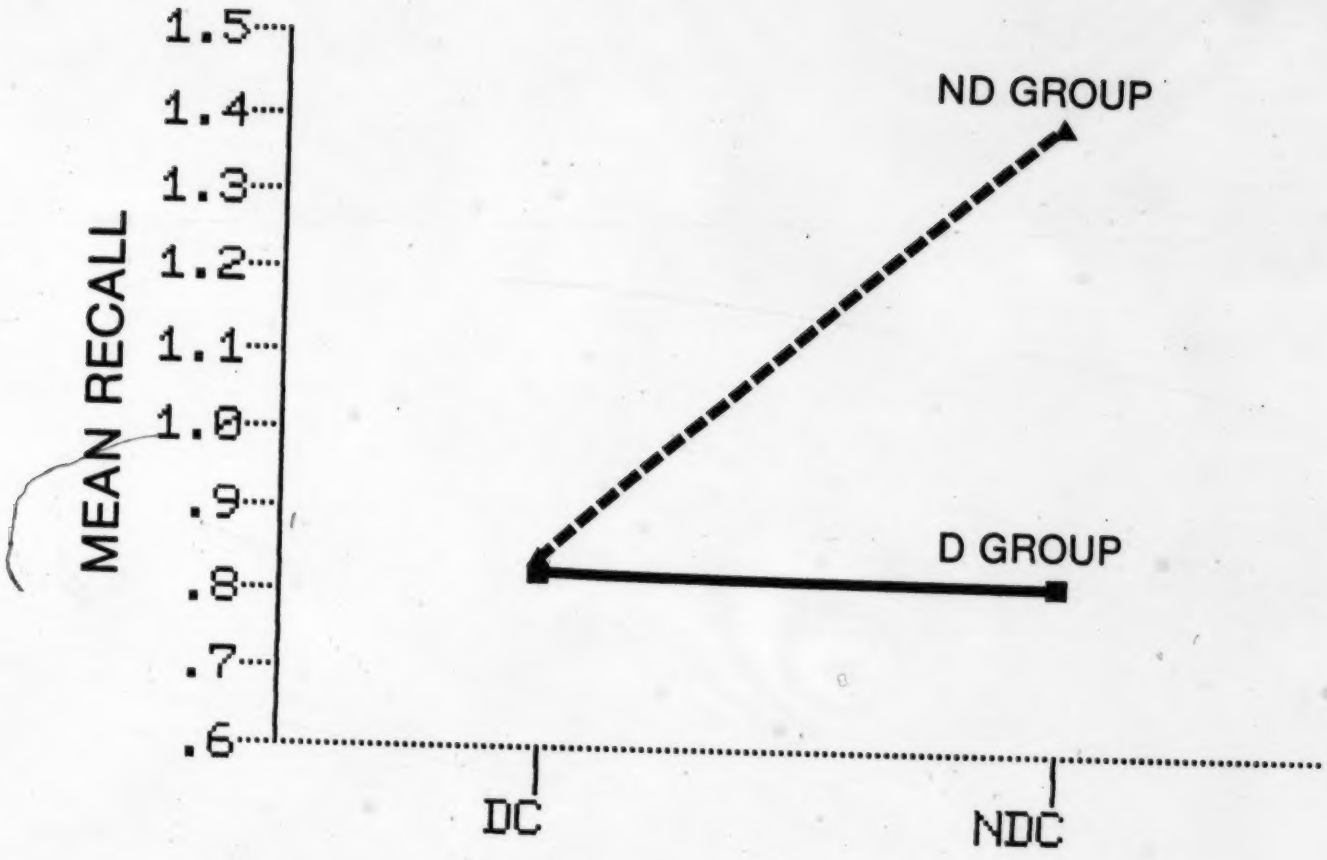

Figure 5. Mean recall of adjectives as a function of group membership and content of recall

Note: DC = depressed content; NDC = nondepressed content

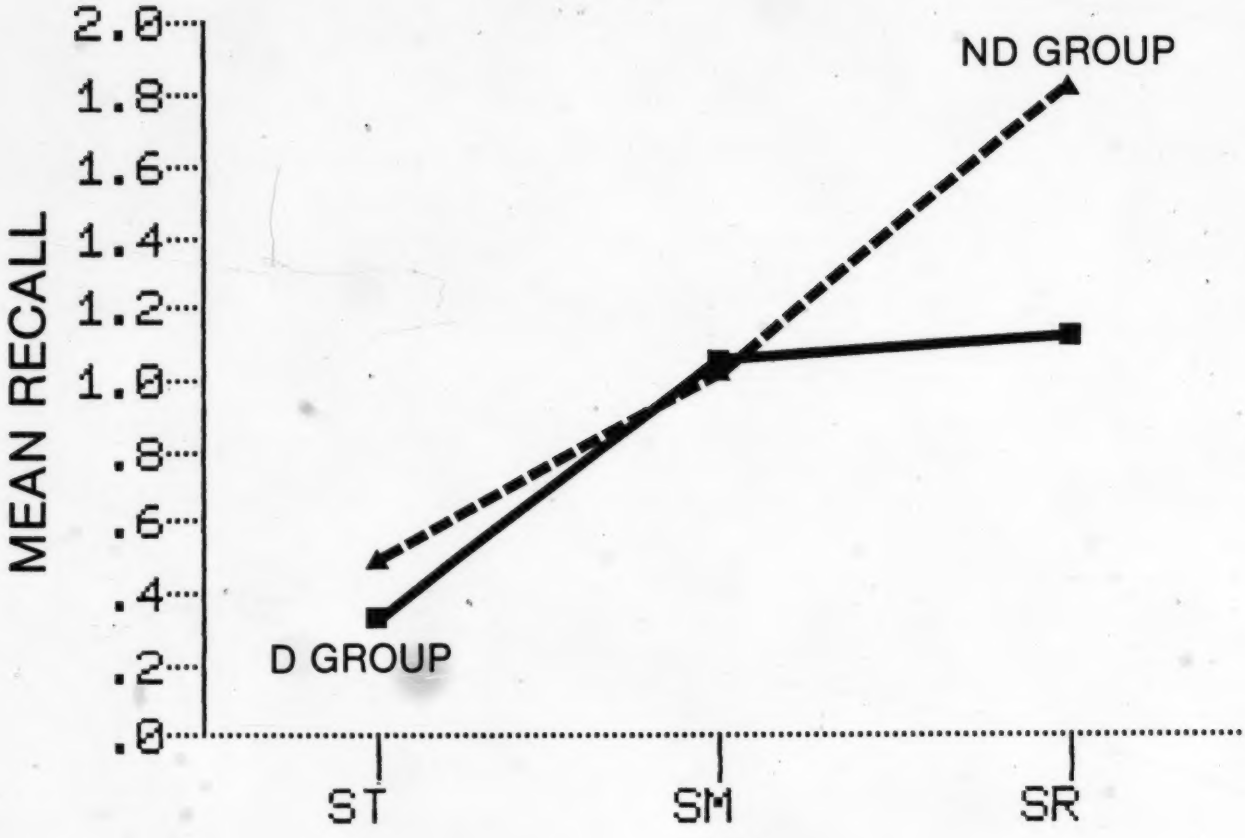

Figure 6. Mean recall of adjectives as a function of content of recall and type of rating task.

Note: DC = depressed content; NDC = nondepressed content; ST = structural; SM = semantic; SR = self-referential

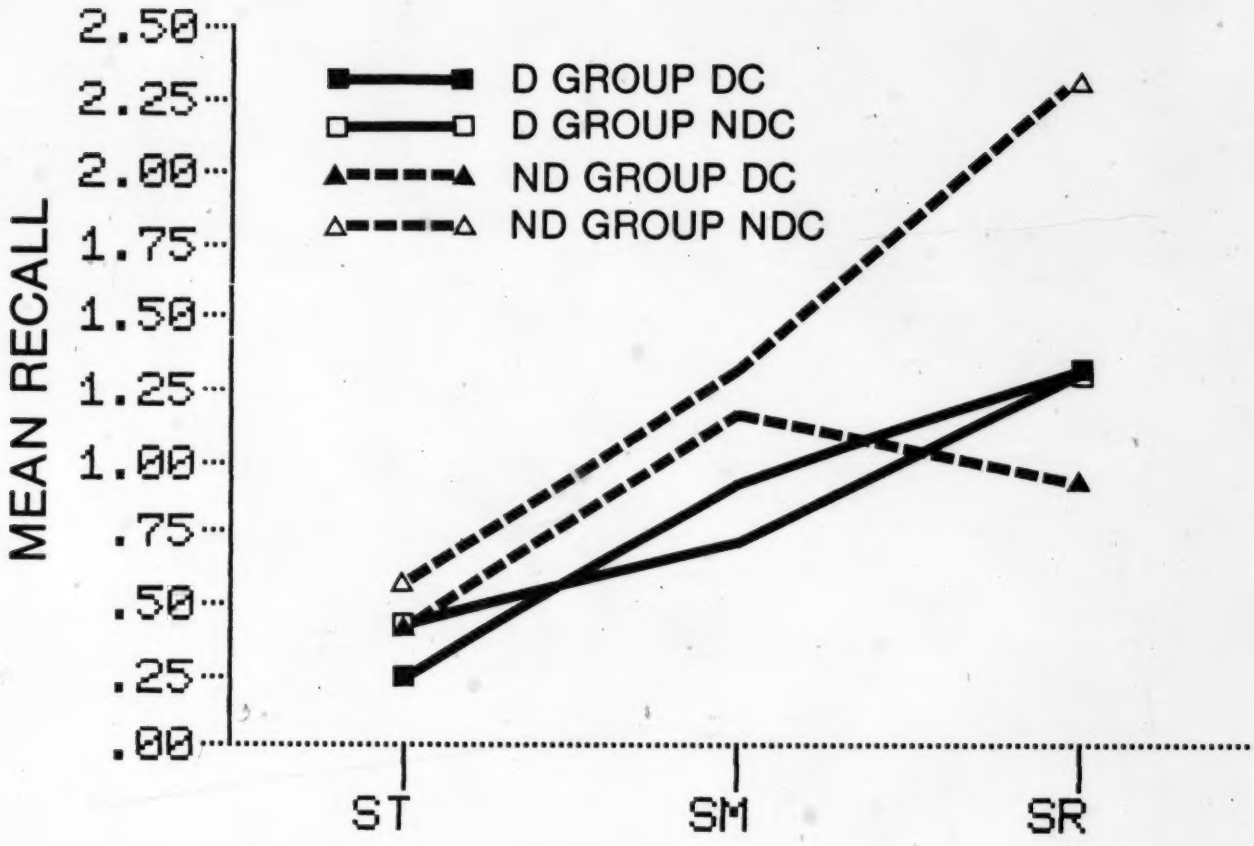

Figure 7. Mean recall of adjectives as a function of group membership, content of recall and type of rating task.

Note: DC = depressed content; NDC = nondepressed content; ST = structural; SM = semantic; SR = self-referential

nondepressives gave evidence of such only with nondepressed content. Most importantly, however, in this interaction depressives showed recall superiority (M = 1.31) for depressed content, self-referent adjectives when compared with nondepressives (M = 0.93). This relationship was reversed in the case of nondepressed content self-referent enhancement, with depressives (M = 1.31) recalling significantly fewer nondepressed content self-referent adjectives than nondepressives (M = 2.33). It should be noted that depressives showed equal recall of both depressed content and nondepressed content self-referent adjectives (both M's = 1.31). It would appear,therefore, that the nondepressives' superior recall of nondepressed content self-referent adjectves (M = 2.33) over depressed content self-referent adjectives (M = 0.93) contributes greatest to the magnitude of the above three way interaction.

An identical repeated measures Groups x Content (repeated) x Rating Task (repeated) ANOVA was carried out on the recognition data. Results of this ANOVA revealed a nonsignificant main effect of groups ($F(1,82) = 1.26$, $p > .265$), indicating that depressives were as efficient as nondepressives in recognizing the adjectives regardless of content. The other main and interaction effects were significant and closely mirrored the results of the ANOVA performed on the recall data (see Table 5).

Figure 8 illustrates the effects of the three way interaction of groups, content and rating task on mean

TABLE 5

Groups x Content x Rating Task ANOVA
for recognition of adjectives

Source	df	Mean Squares	F	p
1. Groups	1	12.69	1.26	0.265 (NS)
1. S-Within	82	10.09		
2. Content	1	45.84	10.83	0.001 (S)
Groups x Content	1	103.15	24.38	0.001 (S)
2. S-Within	82	4.23		
3. Rating Task	2	545.22	140.20	0.001 (S)
Groups x Rating Task	2	11.95	3.07	0.049 (S)
3. S-Within	164	3.89		
4. Content x Rating Task	2	14.61	5.77	0.004 (S)
Groups x Content x Rating Task	2	8.82	3.48	0.033 (S)
4. S-Within	164	2.53		

N: D = 42, ND = 42

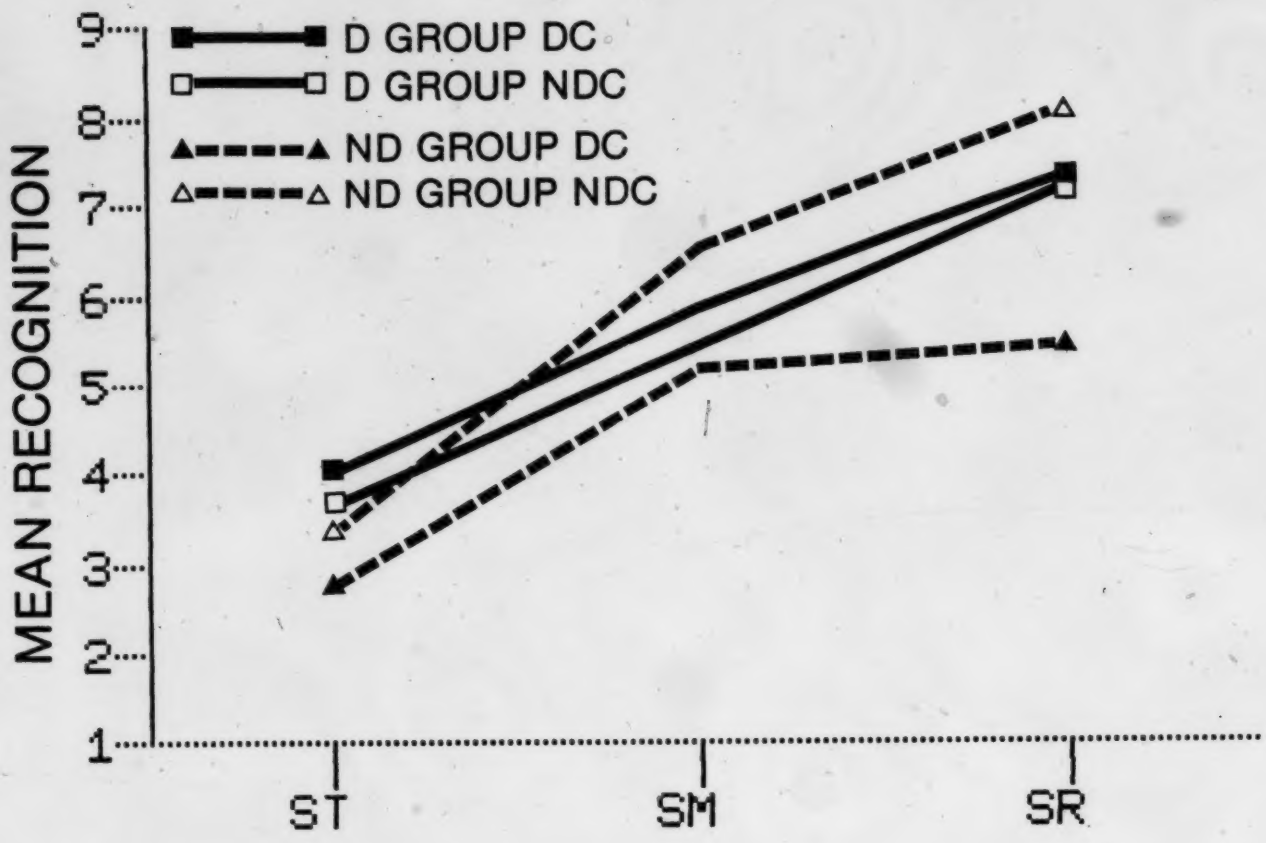

Figure 8. Mean recognition of adjectives as a function of group membership, content of recognition and type of rating task.

Note: DC = depressed content; NDC = nondepressed content; ST = structural; SM = semantic; SR = self-referential

recognition performance for the two groups. As with the recall data, it is the nondepressives' overall superior recognition of nondepressed content adjectives over recognition of depressed content adjectives that contributes the most to the magnitude of the above interaction. In addition, the basic depth of processing self-referent effect was again observed.

It will be recalled that significant group differences were obtained with respect to general memory efficiency, as measured by the WMS. It was necessary, therefore, to perform supplementary analyses to assess the potential WMS effects on the recall data. As no statistical programme offering a three way ANCOVA with two factors repeated was readily available, a two way repeated measures Groups x Content (repeated) ANCOVA was performed on the recall data, employing WMS as a covariate. Results of this analysis are given in Table 6.

As indicated, once the effects of WMS are partialled out, no significant differences in the amount of adjective recall obtained between the two groups. However, recall of nondepressed content adjectives (M = 3.32) was significantly greater than recall of depressed content adjectives (M = 2.48). Similarly, a significant Groups x Content interaction was revealed, with the significance deriving from the superior recall by nondepressives of nondepressed content adjectives (M = 4.00) when compared with depressed content adjectives (M = 2.31). By contrast, depressives did

TABLE 6

Groups x Content ANCOVA for recall of adjectives with WMS as covariate

Source	df	Mean Squares	F	p	Regression Coefficient
Group	1	9.10	2.54	0.115 (NS)	
WMS	1	36.64	10.23	0.002 (S)	0.29
Error	81	3.58			
Content	1	29.17	8.39	0.005 (S)	
Group x Content	1	30.86	8.88	0.004 (S)	
Error	81	3.48			

N: D = 42, ND = 42

not differ in terms of their recall of nondepressed content and depressed content adjectives (M = 2.64 and M = 2.66, respectively). This Groups x Content interaction is illustrated in Figure 9.

Cognitive Distortion

Hypothesis

g) D will demonstrate higher scores on all components of the CEQ compared with their ND counterparts.

Subjects' scores on the CEQ were analyzed using the Hotelling T^2 statistic. The Hotelling T^2 test is the more rigorous multivariate analogue of the familiar two independent samples t-test. It differs from the latter, however, in one important respect. The Hotelling T^2 considers the covariance among the variables while comparing the differences between all the means simultaneously, rather than singly. Results of the Hotelling T^2 analysis of differences between the D and ND group on the four components of the CEQ are presented in Table 7.

These results indicate that the CEQ was significantly effective in discriminating between the D and ND groups. Not only was the CEQ, on the whole, highly discriminating, but results revealed that each of the four cognitive errors, including catastrophizing, overgeneralization, personalization and selective abstraction, were endorsed signficantly more strongly by the D subjects compared with the ND subjects.

Additional relevant information was provided by Pearson

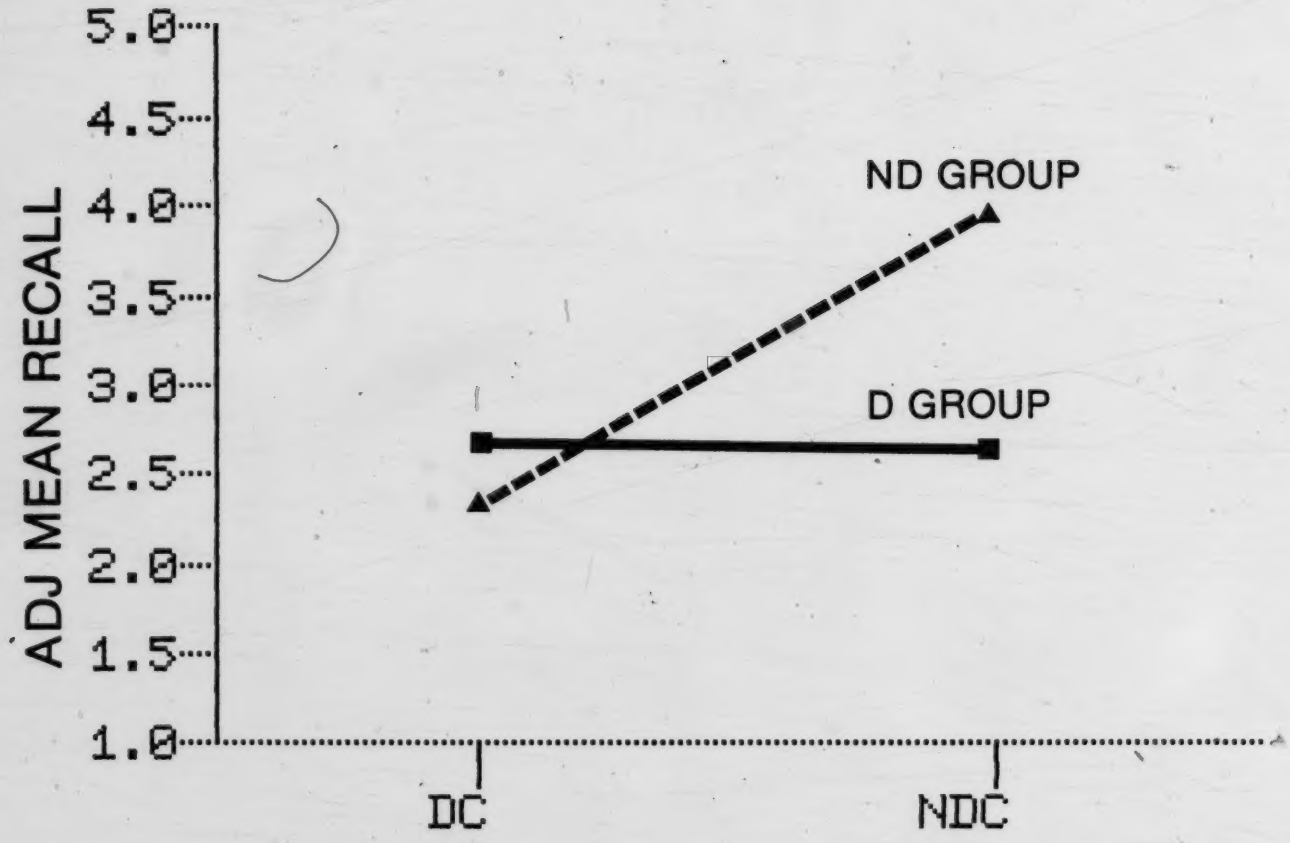

Figure 9. Adjusted mean recall of adjectives as a function of group membership and content of recall, following ANCOVA with WMS as covariate.

Note: DC = depressed content; NDC = nondepressed content

TABLE 7

Hotelling T^2 analysis of CEQ reponses for D and ND groups

Variable	Mean (D)	Mean (ND)	T^2	F	p
Catastrophizing	11.33	2.31	91.87	22.13	0.001 (S)
Overgeneralization	10.69	1.64	75.84	18.27	0.001 (S)
Personalization	8.41	1.19	65.58	15.80	0.001 (S)
Selective Abstraction	10.52	2.95	61.15	14.73	0.001 (S)
Overall T^2			99.03	23.85	0.001 (S)

df: 4, 79

N: D = 42, ND = 42

correlations to evaluate the strength of the relationship between cognitive distortion and level of depression. For the D group, the correlation between BDI and cognitive distortion was highly significant ($r = .62$, $p < .001$), but insignificant between MMPI (D) and cognitive distortion ($r = .11$, $p > .49$). For the ND group, on the other hand, correlations between cognitive distortion and BDI ($r = .16$, $p > .29$), and cognitive distortion and MMPI (D) ($r = -.24$, $p > .12$) were both insignificant. The reduction of the magnitude of the correlation between level of depression, as assessed by the BDI, and cognitive distortion is due, in part, to the restricted range of scores on the BDI for the ND group (0-9) compared with the D group (11-49). Also, wih regard to the D group, the significantly greater correlation of cognitive distortion with the BDI as opposed to its correlation with the MMPI (D) is not surprising, given the predominant emphasis on cognitive factors of the former instrument.

Relationship of Depressive Self-schema to Cognitive Distortion

Hypothesis

h) The recall and recognition of depressed content adjectives will be positively associated with CEQ scores.
i) The recall and recognition of nondepressed content adjectives will have an inverse relationship with CEQ scores.
j) Level of cognitive distortion, as measured by the CEQ, will be associated with differential recall of depressed and nondepressed content adjectives.

The strength of the hypothesized relationship between a depressive self-schema and cognitive distortion was assessed through calculations of Pearson correlations between the CEQ scores and recall data, and CEQ scores and recognition data. These correlations, calculated separately for each group, are given in Table 8. For the D group, of all the correlations that address the possible relationship of self-schema to cognitive distortion, only those between total recall of nondepressed content adjectives and each individual measure of cognitive distortion (Ca, OvG, Pe, SA) reached statistical significance. Values of these correlation coefficients were moderate, ranging from $r = -.31$ to $r = -.39$ ($p < .05$), and negative, as predicted. Thus, higher recall of nondepressed content adjectives tended to be associated with lowered scores on the components of the CEQ measure. Contrary to predictions, however, no significant relationship was obtained between recall and recognition of depressed material and measures of cognitive distortion, nor between recognition of nondepressed material and these measures. None of the correlation calculated for the ND group on these measures were significant.

To further assess the nature of the relationship between depressive self-schema and cognitive distortion, CEQ scores were divided into low (0-8), medium (9-33) and high (34-100) across both groups. Membership of D and ND individuals in these ranges is given in Table 9.

TABLE 8

Pearson correlations between cognitive distortion measures and depressive self-schema measures

D Group	Ca	OvG	Pe	SA	CEQ (T)
Recall (D)	.14	.14	.11	.04	.12
Recall (ND)	-.39*	-.31*	-.34*	-.35*	-.39*
Recognition (D)	.11	.18	.08	.06	.12
Recognition (ND)	-.15	-.14	-.08	-.09	-.13
ND Group					
Recall (D)	.10	.11	-.07	.03	.06
Recall (ND)	-.06	-.18	.07	.05	-.03
Recognition (D)	-.17	-.06	-.24	-.08	-.15
Recognition (ND)	-.09	-.04	-.15	.03	-.06

Note 1. * = $p < .05$

Note 2. Ca = Catastrophizing; OvG = Overgeneralizing; Pe = Personalization; SA = Selective Abstraction; CEQ (T) = Total CEQ score

Note 3. N: D = 42, ND = 42

TABLE 9

Allocation of D and ND subjects to low, medium and high ranges of CEQ scores

	Low	Medium	High	
D	1	14	27	42
ND	29	13	0	42
	30	27	27	

As can be seen, each range contained approximately one third of the total number of subjects. Moreover, the low range was almost exclusively composed of ND individuals, the high range contained only D individuals, and the medium range was equally representative of both D and ND subjects.

Following the above allocation of subjects to the low, medium and high groups of CEQ scores, a repeated measures CEQ x Content (repeated) was performed on the recall data, yielding results as shown in Table 10.

Accordingly, the above ANOVA yielded significant main effects of CEQ (low, medium, high) and content, together with a significant CEQ x Content interaction effect. Specifically, individuals scoring highest on the CEQ measure recalled significantly fewer adjectives (M = 2.11) than individuals belonging to either the low or medium CEQ group (M = 3.33 and M = 3.22, respectively). Furthermore, nondepressed content adjectives were recalled to a significanly greater degree (M = 3.32) than depressed content adjectives (M = 2.49). Finally, in terms of the CEQ x Content interaction, results indicated that with the exception of the high CEQ group, the low and medium CEQ groups recalled significantly more nondepressed content adjectives (M = 4.27 and M = 3.78, respecively) than depressed content adjectives (M = 2.40 and M = 2.67, respecively). With regard to the high CEQ group, they recalled significantly more depressed content adjectives (M = 2.41) than nondepressed content adjectives (M = 1.82).

TABLE 10

CEQ x Content ANOVA for recall data

Source	df	Mean Squares	F	p
1. CEQ	2	25.52	6.69	0.002 (S)
1. S-Within	81	3.82		
2. Content	1	26.48	7.91	0.006 (S)
CEQ x Content	2	22.16	6.62	0.002 (S)
2. S-Within	81	3.35		

N: low CEQ = 30, medium CEQ = 27, high CEQ = 27.

The CEQ x Content interaction is illustrated in Figure 10.

Comparison of FED's and RED's

Hypotheses

m) FED's will obtain lower recall and recognition of depressed content adjectives than RED's.
n) FED's will demonstrate superior recall and recognition of nondepressed content adjectives compared with RED's.
o) RED's will obtain higher scores on the CEQ than FED's.

After careful scrutiny of patient charts and corroboratory self-report upon inquiry, a total of seven depressed patients from the depressive pool of subjects were identified as experiencing a depressive episode for the first time. They were compared on measures of depressive self-schema and cognitive distortion with an equal size sample of depressed patients drawn from the depressive pool and identified in similar fashion as having undergone the maximum previous episodes of depression. Results of simple Student t comparisons are listed in Table 11.

Although none of the above comparisons reached statistical significance, group means were generally in the predicted direction for the depressive self-schema measures with FED's recalling and recognizing less depressed content adjectives and recalling more nondepressed content adjectives than RED's. Similarly, in terms of cognitive distortion, RED's demonstrated higher CEQ scores than FED's.

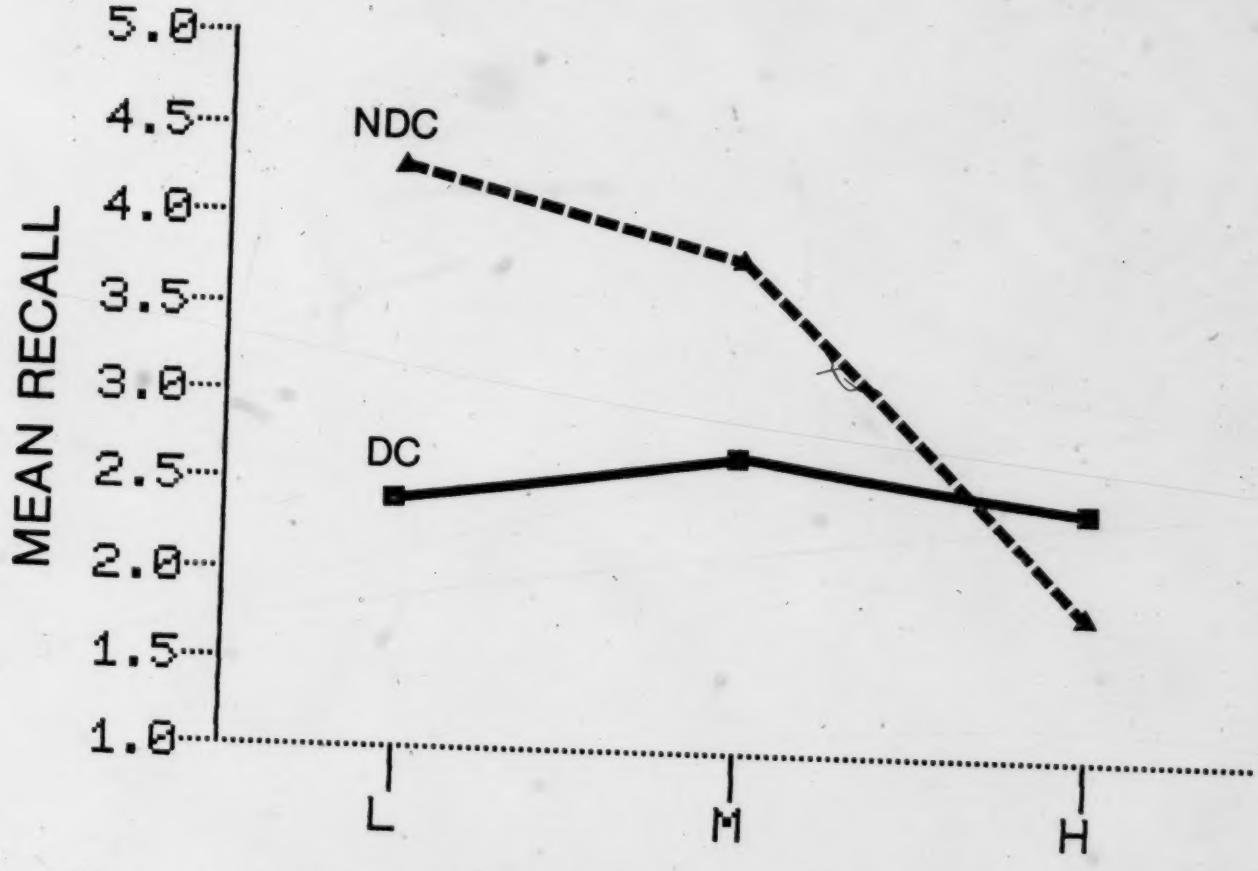

Figure 10. Mean recall of adjectives as a function of content of recall and level of cognitive distortion.

Note: L, M, H = low, medium, high levels of cognitive distortion

TABLE 11

Analysis of differences in depressive self-schema and cognitive distortion for FED and RED samples

	FED (N=7)		RED (N=7)				
Variable	Mean	SD	Mean	SD	F	t	p
Recall (D)	1.29	0.95	3.57	3.95	6.69	-1.49	0.18 (NS)
Recall (ND)	2.14	1.86	1.57	1.27	12.00	0.67	0.52 (NS)
Recognition (D)	14.71	5.47	17.29	5.53	12.00	-0.87	0.40 (NS)
Recognition (ND)	13.43	4.93	15.14	5.27	12.00	-0.63	0.54 (NS)
CEQ (T)	34.43	23.46	47.86	26.33	12.00	-1.01	0.33 (NS)

Summary

In summary, as can be gleaned from the above presentation of results, the hypotheses of the study were generally upheld, though a few notable exceptions were obtained. Thus, contrary to predictions, D individuals did not demonstrate superior recall of self-referent depressed content adjectives compared with their recall of self-referent nondepressed content adjectives, although their recognition of such was in the expected direction (see Hypothesis e). Similarly, and again contrary to predictions, D individuals gave evidence of the basic depth of processing self-referent effect over both types of content (see Hypothesis k). Furthermore, in terms of the relationship between self-schema and cognitive distortion, the only significant correlation was the inverse relationship between recall of nondepressed content adjectives and CEQ scores. The recognition of such content and CEQ scores was not significant, however (see Hypothesis i), nor was the recall and recognition of depressed content significantly correlated with CEQ scores (see Hypothesis h). Finally, predicted differences between FED's and RED's (see Hypotheses m,n, o) were not upheld although they were in the expected direction.

CHAPTER 6

Discussion

This chapter will begin with an integration of the findings of the study. An exploration of the relevant implications of these results to theory will follow and suggestions for future research will be offered. In conclusion, the relevance of findings for practitioners will be noted.

Integration of Results

The present investigation, focused on the relationship between a depressive self-schema and cognitive distortion and on possible differences in depressive self-schema and cognitive distortion between first episode and repeated episode depressives. In pursuing these primary objectives, a number of additional findings relevant to previous research in these areas were obtained and will be discussed first.

Depressive Self-Schema

With regard to a depressive self-schema it should be noted that the extent of remembering personal information, both in terms of recall and recognition, is generally considered to reflect the strength of a self-schema (see Davis & Unruh, 1981). The present results suggest that depressives possess a stronger depressive self-schema than nondepressives, the latter group of individuals showing an almost complete absence of depressive elements in their self-schema. Conversely, evidence of the operation of a

significantly stronger non-depressive self-schema in non-depressives was underscored, although depressives also displayed a considerable amount of non-depressive elements in their self-schema. These suggestions rest on data showing significantly enhanced recall of self-referent depressed content adjectives for depressives compared with nondepressives and significantly higher recall of self-referent nondepressed content adjectives for nondepressives compared with depressives.

However, the present results indicate that additional closer attention needs to be paid to the nature of the differences in self-schema between depressives and nondepressives. Specifically, in considering the two groups of individuals separately, an interesting finding was demonstrated. Thus, for depressives the recall of self-referent depressed content adjectives was of the same magnitude as their recall of nondepressed content adjectives, suggesting that for them the strength of a depressive self-schema vis-a-vis the strength of a nondepressive self-schema was equally balanced. This was most definitely not the case for the nondepressed group, whose recall of self-referent nondepressed content adjectives was vastly superior to their recall of self-referent depressed content adjectives.

Considered in unison, the above data on intra-group differences between depressive and nondepressive components of a self-schema suggest that for nondepressives solely

nondepressed content (e.g., I am assertive, capable, achieving) forms part of their structural component of self. In the case of depressed individuals, however, it appears that both depressed content (e.g., I am a failure, inadequate, guilty) and nondepressed content constitutes part of their structural component of self.

A number of additional findings provide convergent evidence on the proposition of qualitative differences in the structural component of self between depressed and nondepressed individuals. Overall, data on the recognition of adjectives closely paralleled the data on their recall, revealing that nondepressives recognized a significantly greater number of nondepressed content than depressed content adjectives. On the other hand, the depressed individuals demonstrated approximately equivalent recognition of the two types of adjectives. Similarly, when the possible effects of a general memory factor were partialled out, results of an analysis of covariance revealed almost identical recall of depressed content and nondepressed content for depressives, but significantly higher recall of nondepressed content compared wih depressed content adjectives for the nondepressed group. Furthermore, D individuals demonstrated the basic self-referent processing effect over both depressed and nondepressed content adjectives, attesting to the presence of a rich data base, both depressed and nondepressed, which promotes recall of both types of material. By contrast, ND individuals

showed the basic self-referent processing effect only with nondepressed content adjectives, suggesting the presence of a rich nondepressed data base and the absence of a depressed data base which either promotes recall or inhibits recall respectively, depending on the content of the to-be-remembered material. Finally, differences in self-perception between depressives and nondepressives again attest to differences in content of self-schema for these two groups of individuals. Specifically, results indicated that, although depressives viewed depressed content adjectives as significantly more self-descriptive than nondepressed content adjectives, nevertheless they included a substantial number of nondepressed content adjectives among their self-descriptors. This was in marked contrast to the group of nondepressed individuals whose endorsement of depressed content adjectives as self-descriptive was practically absent and completely overshadowed by the magnitude of their choice of nondepressed content adjectives as self-descriptors.

Cognitive Distortion

In terms of cognitive distortion and consequent misinterpretation of experience, results indicated strongly that there were significant differences between depressives and nondepressives in terms of their tendency to commit cognitive errors of the type described by Beck. More especially, data suggested that compared with nondepressives depressives made more errors in evaluating the significance

of events, assumed more personal responsibility for external events unrelated to themselves, tended to draw more conclusions from isolated incidents and apply them indiscriminately to related and unrelated situations, and demonstrated a greater tendency to focus on the negative details of a situation while ignoring more salient positive features of the situation. These findings replicate previous research results indicating that depressed individuals show more cognitive distortion than nondepressed individuals (Hammen & Krantz, 1976; Lefebvre, 1981).

Relationship of Depressive Self-Schema to Cognitive Distortion

In drawing attention at this point to the primary objectives of the present investigation, it will be recalled that one of the most important functions of schemata is that of a filter for the myriad of bits of information that impinge on the individual's information processing and attentional capacities (Neisser, 1967). As a result of this selectivity, one of the most important consequences of their operation are bias and distortion, whereby particular features of incoming information that are inconsistent with the general organization of the schema are omitted, while other aspects of the information are elaborated to be consistent with the activated schema (e.g., Bransford & Johnson, 1972).

Consistent with this, Beck's model of depression contains the assertion of schema-mediated distortion in

depressive illness. The present results provide at least partial support for this proposition. They suggest that the presence of a non-depressive self-schema, or, by implication, the absence of a depressive self-schema, is associated with a lowered propensity to commit logical thinking errors, thus leading to fewer misinterpretations of experience. This suggestion is based on data showing significant negative correlations of moderate proportions between recall of nondepressed content adjectives and measures of catastrophizing, overgeneralization, personalization and selective abstraction. It is important to note, however that this relationship was found only for depressives but was not obtained with the nondepressed individuals. Furthermore, in terms of the relationship between a depressive self-schema and cognitve distortion, no significant data were found to suggest that the presence of a stronger depressive self-schema accompanies higher levels of cognitive distortion. The absence of such data held for both groups of individuals.

Additional evidence of a relationship between self-schema and distortion came from results of an analysis of variance across groups of recall data with level of cognitive distortion and content of recalled material as factors. In this instance differing levels of cognitive distortion tended not to be associated with differential strength of a depressive self-schema. In fact, the strength of the depressive self-schema associated with both low and

high levels of cognitive distortion was practically identical. By sharp contrast, however, decreasing strength of a nondepressive self-schema was distinctly associated with increasing levels of cognitive distortion.

Overall, although correlational evidence was obtained to suggest that a depressive self-schema may tend to be associated to a moderate degree with a tendency to commit cognitive errors, results of the analysis of variance investigating this relationship are more distinct and appear more conclusive. They suggest that the presence of a nondepressive self-schema seems to preclude the operation of cognitive distortion with subsequent distortion of reality. However, the presence of a depressive self-schema does not seem to be associated with cognitive distortion in any statistically significant and consistent fashion.

Comparison of FED's and RED's

In addition to examining the relationship of a depressive self-schema to cognitive distortion, a component primary objective of the present study was to shed some light on whether or not individuals with a long history of experience with depression differed with respect to a depressive self-schema and cognitive distortion by comparison with individuals suffering from depression for the first time. While it was hoped at the outset to be able to provide comparisons among greater numbers of individuals of both types, it soon became evident that a large number of FED's was not readily available for research purposes. Not-

withstanding the small sample sizes and the fact that results failed to reach statistical significance, data revealed that the depressive self-schema of first time depressives was generally weaker (that is, a less efficient processor of depressed content) than that of the repeated episode depressives. Conversely, the nondepressive self-schema of the former was stronger (that is, a more efficient processor of nondepressed information) than that of the latter group of depressed individuals. In addition, RED's also tended to distort their experiences more than FED's, although again the magnitude of this difference did not reach statistical significance. These results suggest tentatively that the possibility, predicted from Beck's conceptualizations, of differences in depressive self-schema and resulting distortion between individuals with varying amounts of depressive episodes may well be a viable one.

Depth of Processing Effect

Before attending to the implications of the findings presented above, one final set of data will be discussed, which address the depth of processing paradigm of Craik and Lockhart (1972). In their formulation of the paradigm these authors asserted that the coding of input into memory was the most important variable influencing its recall. They argued further that the variety of encodings possible for a given stimulus could be arranged hierarchically in terms of the depth of processing, which could vary from a superficial sensory analysis through phonemic levels of analysis to

semantic levels of analysis with a corresponding increase in trace durability. More recently Craik and Tulving (1975) noted that, in addition to the deph of encoding, the spread or elaboration of encoding within the various encoding domains is an important determinant of memory performance.

Research stemming from the application of the depth of processing paradigm to the sphere of personality and social psychology has suggested that information processed with reference to self produces more durable traces than information processed semantically (Kendzierski, 1980; Rogers, Kuiper & Kirker, 1977). Results of the present study confirmed these previously reported findings of the basic depth of processing self-referent effect by showing superior recall of self-referentially processed material compared with semantically processed material, which, in turn, yielded superior recall to structurally processed material. This effect was obtained generally for both depressed and nondepressed individuals and was demonstrated also with respect to recognition data.

These results suggest that despite displaying deficits in terms of a general memory factor, when compared with nondepressives, depressed individuals appear to utilize processing cues in a fashion similar to their nondepressed counterparts.

Implications for Theory

Beck's Model in Relation to Self-Schema

In considering the implications of the above results,

their relevance to Beck's model of depression and to a view of the self in depression will be treated jointly. This approach is consistent with the fact that Beck's construct of depressive schemata was assessed specifically through an evaluation of a depressive self-schema and its role in the processing of personal information.

Overall, in terms of a self-schema results of the present study suggest that there are distinct differences between depressed and nondepressed individuals when we compare them with each other. Thus depressives possess more depressive elements in their self-schema than nondepressives, the latter group of individuals having significantly more nondepressive features in their self-schema compared with depressives. Such inter-group differences converge on predictions derived from Beck's model of depession and are also consistent with previous research, which has delineated the above differences in content of the self-schema between depressed and nondepressed individuals (Derry & Kuiper, 1981). However, specifying the nature of these differences further, we note that depressed individuals are about as likely to contain both depressed and nondepressed elements as part of the structural component of their self whereas the self of nondepressives is characterized almost exclusively by nondepressed content.

The finding that depressives utilize both a depressive and a non-depressive self-schema runs contrary to Beck's

assertion of overactive and prepotent depressive schemata when the depression becomes full-blown. At the time of assessment the depressed individuals were sufficiently depressed as to warrant hospitalization, so persumably they were in the full throes of a depressive self-schema. Yet, as indicated, they showed evidence of the operation of a nondepressive self-schema in addition to a depressive self-schema.

The work of Davis and Unruh (1981) provides a plausible explanation for the above findings. These authors have presented a developmental model of the operation of a self-schema in depression. Investigating differences in subjective organization (SO) of self descriptive adjectives between short-term and long-term depressives, Davis and Unruh found that short-term depressives showed the lowest levels of SO. In an attempt to offer an explanation for their results, they concluded that in depression the self-schema undergoes transition and development. They argued further that with the onset of depression the self-schema is weakened as a strong personal information processor by the change in self-referents with many terms once used in self-descriptions being substituted by new ones. However, over time, the schema reorganizes and gains predepression levels of processing facility.

It will be recalled at this point that the study of Davis and Unruh (1981) had been criticized for the lack of depressed content self-descriptors by Derry and Kuiper

(1981) and by the author in a previous section of this work. However, in light of the findings of the present study, it would appear that their method contained cosiderable validity. Although currently depressed content adjectives were included in the study, nevertheless depressives still demonstrated a nondepressive self-schema in addition to a depressive self-schema, in this way behaving similarly to the long-term depressives in Davis and Unruh's study.

In sum, it appears, therefore, that a premorbid predominantly nondepressive self-schema undergoes a change during the depressive episode resulting in a self-schema which contains both depressed and nondepressed elements. One might speculate that such an inconsistency of self in depression might give rise to the indecisiveness and motivational deficits that are frequent accompaniments of depression.

Beck's Model in Relation to Self-schema and Cognitive Distortion

With respect to the relationship of self-schema to cognitive distortion, again the most important finding was that a nondepressive self-schema tended to be associated with low lovels of cognitive distortion. If we assume, and there is no reason not to, that a nondepressive self-schema functions to allow interpretations of experience based on realistic and logical thinking, then the degree to which it undergoes disruption in depression might determine the degree to which a depressed individual tends to commit

cognitive errros as described by Beck.

To integrate thus far, the author has to conclude that the present results provide, at best, only indirect evidence in support of Beck's model of depression. The evidence is indirect since, though it is true that depressives showed a stronger depressive self-schema and gave more distorted interpretations of experience than nondepressives, nevertheless they possessed a substantial amount of nondepressed content in their self-schema. And asserting that a depressive self-schema is all encompassing in depression and is associated with high levels of cognitive distortion is not the same as obtaining evidence suggesting that depressives have a weaker nondepressive self-schema and that a nondepressive self-schema is associated with low levels of cognitive distortion.

Memory and Depth of Processing Paradigm

An additional area of relevance of the present study addresses the issue of memory function in depression. In terms of general memory efficiency, as assessed by the WMS, depressives demonstrated reduced functioning compared with nondepressives. However, in terms of the depth of processing paradigm depressives evidenced a similar pattern of utilization of processing cues as nondepressives, thus extending the basic depth of processing effect into clinically depressed populations as in previous studies (Derry & Kuiper, 1981). Not only that, they recalled a significantly greater number of self-referent depressed

content adjectives than did nondepressives. It would appear, therefore, that the difference in memory functioning observed on the WMS might well be qualitative rather than quantitative in nature. In this regard, a feasible explanation is that the inconsistency of the self observed in depression, as outlined above, results in a preoccupation with self observed in depression. This precludes optimal interaction with the environment which is needed to perform efficiently in any undertaking, including a test of memory. On the other hand, enhanced recall of self-referent depressed content material is consistent with this self-absorption.

The Diagnosis of Depression and Theories of Depression

Results of the present study also address the issue of diagnosis of depression. It will be recalled that the correlation between BDI and MMPI (D) accounted for only 4% of the variance between them. The most obvious implication of this finding is in terms of the multidimensional nature of depression with perhaps many discrete components, including cognitive, behavioural and physiological factors. Although in the present sample of depressives both instruments diagnosed the presence of depression, it could well be that a diagnosis of depression on one instrument would not necessarily predict a like diagnosis on another instrument. In other words, an individual may well display cognitive symptoms of depression without necessarily exhibiting some of the other symptoms. In the author's

clinical experience, this is not an isolated occurence. Finally, what the above implies is the need for researchers to clearly specify the instruments used in arriving at their depressive populations.

In terms of theoretical accounts of depression, the present results suggest caution against viewing depression entirely from a deficit point of view, a characteristic feature of theoretical models addressing the nature of that disorder. For example, classical and ego-analytic perspectives generally emphasize a deficient ego which results essentially in a loss of self-esteem. Similarly, behavioural accounts stress deficient social skills (e.g. Lewinsohn, 1975) or faulty attributional processes resulting in helplessness (e.g. Seligman, 1975). Beck's model too highlights the negative thought content, cognitive distortion and negative, depressive schemata in depression. In sharp contrast the data from this investigation underscore the positive, nondepressive features of the depressed individual's functioning. These nondepressive features come together to form the nondepressed self-schema, whose operation appears suppressed, but certainly not totally absent in depression. Furthermore, this nondepressed self-schema is likely among the more important developmental factors in Akiskal and McKinney's (1975) integrated account of depression and probably exerts a crucial modifying influence on how the other factors in that model, including physiological, genetic and psychosocial

factors, find expression in depression.

Future Research

Given that evidence from this study suggests that a previously predominantly nondepressive self-schema reorganizes to include depressive elements during a depressive episode, while still retaining nondepressed features, the most obvious implication in terms of future research is for investigations of the self-schema between depressive episodes. Particular attention needs to be given to events that instigate the reorganization of the self-schema, and whether this transition is a discrete, acute process as opposed to a gradual one.

In addition, given that results of the present study were at least encouraging in terms of possible differences between first episode depressives and repeated episode depressives, a replication is warranted, although the difficulty of obtaining a large sample of first time depressives is recognized. It could be that we are truly in the age of melancholia (Klerman, 1977) with depressive illness a sign of the times. Be that as it may, one aspect of differences between first time and repeated episode depressives may address differences in the reorganization of the self-schema during depression, as outlined above.

Finally, it would be useful to investigate the differences in self-schema in bipolar depression according to either manic or depressed phases. Furthermore, it might be suggested at this point that, should manic individuals

display a tendency towards cognitive errors, these might well be in the direction of over-valuing their personal strengths and capabilities.

Relevance to Clinical Practice

From a theoretical standpoint, in view of the multifaceted nature of depression, the present author has criticized consistently Beck's almost exclusive emphasis on cognitive factors in his model of depression. However, if we allow that idiosyncratic cognitive processes are frequently present in most depressions, then Beck's model is of great pragmatic value in dictating a therapeutic approach. It is the author's contention that Beck's model for the therapy of depression is his most important contribution, rather than his rather one-sided theoretical statements. This holds true, especially as there is evidence asserting that therapeutic effect is independent of treatment modality (McLean & Hakstian, 1979).

While Beck's cognitive approach to the treatment of depression has proven of considerable value, the present results suggest that the approach needs to be expanded. It would appear that the identification and modification of beliefs and attitudes underlying the depressive schemata is at best an incomplete strategy. Therapeutic gains would be achieved more readily and perhaps sooner if attention is given to identifying the beliefs and attitudes underlying the nondepressive schemata. Comparisons would then be possible between these polarized beliefs with the positive

ones subsequently underscored. In and of itself this attention to and affirmation of the depressed individual's strengths, rather than deficits, would be therapeutic. Furthermore, utilizing such a strategy, it would be possible to increase the individual's capacity to test reality about the self, the environment and the future without distortion, by having the individual gauge the differential environmental consequences of holding the two qualitatively different sets of beliefs.

Results of the present study offer a number of additional guidelines to the therapist involved in treating the depressed client. They are not intended to represent a systematized therapeutic approach, but are merely presented in the hope that they may serve to increase therapist flexibility.

In this investigation, the degree of cognitive distortion was among the most powerful discriminators between depressives and nondepressives. Given this finding, the use of a Cognitive Errors Questionnaire of the type utilized in the present study is recommended. This type of questionnaire would have to tap different aspects of the individual's functioning, including his personal domain (e.g., aspirations, standards of conduct) and his interpersonal domain (e.g., family interactions, work interactions). As such, it would be a valuable tool at the outset of therapy and a useful adjunct to the continuous exposition of distortions during the course of therapy.

In terms of the self-schema, an important finding of the present study was that depressed individuals possessed a significant amount of nondepressed elements in the structural component of their self, in addition to depressed elements. As is the case with cognitive distortion, a starting point in the therapy of depressed clients may well be the assessment of their self-schema. In this respect, one way of analyzing tests currently in use, such as the Thematic Apperception Test, Rotter's Incomplete Sentences Blank and the Story-Completion technique, would be in accordance with self-schema theory. Thus, the productions and themes of individuals would be scrutinized for evidence of the faulty basic rules (e.g., "If I don't have love, I am worthless") according to which they evaluate their experiences and regulate their behaviour. Another way of assessing an individual's self-schema would be through the use of hypnotic age regression. This would serve to clarify the content of the self-schema, but particularly perhaps the point in the individual's life when the healthy nondepressed development of the individual was arrested and depressive elements began to be incorporated into the person's self-schema.

In addition to being useful in assessing the self-schema, the use of hypnosis also points to a viable way of modifying the operation of the self-schema. For example, most of Milton Erickson's techniques are aimed at depotentiating the individual's conscious sets and to

activate a search on the unconscious level that will turn up associations that were previously suppressed. These associations gain ascendency in the unconscious until they finally translate into responsive behaviour (Erickson, Rossi & Rossi, 1976). The use of analogy and metaphor as adjuncts to hypnotic work (Lankton, 1980) also appears to activate unconscious association patterns and response tendencies that eventually result in an apparently new behavioural response. The activation of these patterns and response tendencies, which are already present in the individual, though not utilized, would seem to be of crucial importance, especially as results of this study suggested the presence of a significant nondepressive component in the self-schema of depressed individuals. The activation of this nondepressive component of self is, therefore, recommended through the use of hypnosis and metaphor.

Thought disruption or thought stopping (Cautela, 1977) may be utilized to further promote the disruption of the operation of a depressive self-schema. Simultaneously, the emergence of the nondepressive component of the self may be encouraged through teaching the depressed individual to substitute task-oriented coping thoughts, focusing on the individual's personal assets, behavioural accomplishments and list of options.

The finding that self-referentially processed material is the most memorable suggests that individuals should be encouraged in a process of self-reflection and

self-reference. Given that material processed in this fashion is highly memorable, the maintenance and impact of therapeutic effects might well be increased. It also indicates that encouraging clients to own their thoughts and feelings, a common procedure in many therapeutic approaches, has some validity.

In conclusion, the author wishes to draw attention once more to the emergence of a "cognitive science," which has resulted in part from research into how people process, comprehend and remember information. Within this framework, the notion of schemata has become the focus of much theorizing and empirical investigation. Although results of research have been promising, the process by which schemata are acquired and activated need more complete specification (Thorndyke & Yerkovich, 1980). We may hope that an elucidation of these processes will offer additional guidelines in therapeutic efforts aimed at deactivating depressive and reactivating nondepressive self-schemata in individuals suffering from depression.

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Appendix

A. Word Rating Questionnaire

B. Cognitive Errors Questionnaire

C. CEQ Scoring Key

A.

WORD

RATING

QUESTIONNAIRE

This questionnaire will help us to understand how depressed and non-depressed persons rate certain words. The questionnaire contains 60 words and is structured in the following way. The actual word to be rated is followed by a question which requires either a YES or a NO response. Then comes a column in which you can respond your YES or NO answer.

EXAMPLE

WORD	QUESTION	ANSWER
START	Does this word mean the same as "BEGIN" ?	YES NO

Thus, you first read the word, then you read the question about the word, and then you record your answer by circling either YES or NO.

WHAT YOU HAVE TO DO

You will be asked to answer one of three kinds of questions about a given word.

- You may be asked to rate whether or not the word is printed in small letters or capital letters:

EXAMPLE

white	Small letters?	YES NO
GREEN	Small letters?	YES NO

- OR, you may be asked to rate whether or not the word <u>means the same as</u> another word:

<u>EXAMPLE</u>

HIDE	Means same as "CONCEAL" ?	YES	NO
NOISY	Means same as "QUIET" ?	YES	NO

- OR, you may be asked to rate whether or not the word <u>describes you:</u>

<u>EXAMPLE</u>

TALL	Describes you ?	YES	NO

(NOTE: This word has not been given a rating as each individual would rate it in his/her own special way. For example, if I were to rate whether or not the word TALL described me, I would answer ....)

<u>PRACTICE ITEMS</u>

In order to gain some practice, and to make sure that you understand what you have to do, please rate the following words:

tangible	Small letters ?	YES	NO
REPAIR	Means same as "BREAK" ?	YES	NO
BLONDE	Describes you ?	YES	NO
MAGICAL	Small letters ?	YES	NO
UNITE	Means same as "JOIN" ?	YES	NO

If you have any questions, or you are not completely sure of what you have to do, please ask.

Please remember, <u>first read the word, then the question about the word, and then record your answer by circling either YES or NO.</u>

forceful	Small letters ?	YES	NO
NEIGHBORLY	Means same as "HIDDEN" ?	YES	NO
FORLORN	Describes you ?	YES	NO
HELPLESS	Means same as "POWERLESS" ?	YES	NO
RATIONAL	Describes you ?	YES	NO
BLEAK	Small letters ?	YES	NO
CAPABLE	Describes you ?	YES	NO
BLUE	Means same as "SAD" ?	YES	NO
listless	Small letters ?	YES	NO
CONSISTENT	Means same as "FILTHY" ?	YES	NO
DISMAL	Describes you ?	YES	NO
FREE	Small letters ?	YES	NO
LOST	Describes you ?	YES	NO
GUILTY	Means same as "HUGE" ?	YES	NO
downhearted	Small letters ?	YES	NO
ACHIEVING	Small letters ?	YES	NO
JOVIAL	Describes you ?	YES	NO
PROPER	Means same as "CORRECT" ?	YES	NO

DESTROYED	Small letters ?	YES	NO
TROUBLED	Describes you ?	YES	NO
amiable	Small letters ?	YES	NO
UNWANTED	Means same as "HARD" ?	YES	NO
POLITE	Describes you ?	YES	NO
ORDERLY	Means same as "METHODICAL" ?	YES	NO
WEARY	Describes you ?	YES	NO
MELANCHOLY	Means same as "BLUE" ?	YES	NO
GLUM	Describes you ?	YES	NO
organized	Small letters ?	YES	NO
INQUIRING	Means same as "IMPOSSIBLE" ?	YES	NO
HELPFUL	Small letters ?	YES	NO
CRITICIZED	Small letters ?	YES	NO
DURABLE	Means same as "LASTING" ?	YES	NO
OPPRESSED	Describes you ?	YES	NO
failure	Small letters ?	YES	NO
LOYAL	Describes you ?	YES	NO
COURTEOUS	Means same as "LOUD" ?	YES	NO

solemn	Small letters ?	YES	NO
HEARTSICK	Means same as "DEPRESSED" ?	YES	NO
UNLUCKY	Small letters ?	YES	NO
PUSHY	Describes you ?	YES	NO
SOCIABLE	Means same as "SOFT" ?	YES	NO
PLAYFUL	Describes you ?	YES	NO
loser	Small letters ?	YES	NO
DULL	Small letters ?	YES	NO
GRACIOUS	Describes you ?	YES	NO
HOPELESS	Describes you ?	YES	NO
HASTY	Means same as "HURRIED" ?	YES	NO
CURIOUS	Means same as "ORIGINAL" ?	YES	NO
INFERIOR	Means same as "INADEQUATE" ?	YES	NO
maternal	Small letters ?	YES	NO
DOWNCAST	Describes you ?	YES	NO
REBELLIOUS	Small letters ?	YES	NO
WEAK	Describes you ?	YES	NO
STURDY	Means same as "FALSE' ?	YES	NO

assertive	Small letters ?	YES	NO
NEAT	Describes you ?	YES	NO
INADEQUATE	Small letters ?	YES	NO
DEFEATED	Means same as "BEATEN" ?	YES	NO
TIDY	Means same as "METALLIC" ?	YES	NO
EMPTY	Describes you ?	YES	NO

B.

Cognitive Errors/Questionnaire

(CEQ)

This questionnaire describes a number of situations that might occur in daily life, each followed by a thought in "quotations" that a persn in the situation might have. Underneath this is a group of statements that describes how similar the thought is to how you would think in that situation.

Please read each situation and imagine that it is happening to you. Then, read the thought (which is in "quotations") following that situation. Cirle the statement underneath each thought that best describes how similar that thought is to how you would think in that situation.

Because you may not have had the experiences described in some of the situations, it is important that you imagine that it is happening to you. Be sure that you don't rate the situation, just rate how much the thought (which is in "quotations") is like the way you would think. As an example, read the following:

A. You have just come out of the store and notice a dent in your car that wasn't there before you went in. You think to yourself, "Oh no, the car is wrecked."

This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

If that thought ("Oh no, the car is wrecked.") was somewhat like the way you would think in that situation, you would circle: somewhat like I would think. Please start on the next page and rate every thought.

1. Your boss just told you that because of a general slowdown in the industry, he has to lay off all of the people who do your job including you. You think to yourself, "I must be doing a lousy job or else he wouldn't have laid me off."

   This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

2. You are a manager in a small business firm. You have to fire one of your employees who has been doing a terrible job. You have been putting off this decision for days and you think to yourself, "I just know that when I fire her, she is going to raise hell and will sue the company."

   This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

3. Last week you painted the living room and your spouse said it really looked great. When you were cleaning up, you found that you had got paint on the rug and thought, "Boy, this wasn't a very good painting job."

   This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

4. You noticed recently that a lot of your friends are taking up golf and tennis. You would like to learn, but remember the difficulty you had that time you tried to ski. You think to yourself, "I couldn't learn skiing, so I doubt if I can learn to play tennis."

   This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

5. You and your spouse recently went to an office party at the place where your spouse works. You didn't know anybody there and had a terrible time. When your spouse asks you if you want to go to the neighbours to visit, you think, "I'll have a terrible time just like at that office party."

   This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

6. You just finished spending three hours cleaning the basement. Your spouse however, doesn't say anything about it. You think to yourself, "(S)he must think I did a lousy job."

   This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

7. Last night, your spouse said (s)he thought you should have a serious discusssion about sex. You think to yourself, "(S)he hates the way we make love."

This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

8. You have been working for six months as a car salesperson. You had never been a salesperson before and were just fired because you had not been meeting your quota. You thought, "Why try to get another job, I'll just get fired."

This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

9. Your job requires a lot of travel. You had hoped to drive 400 miles today but you hit bad weather that slowed you down. When you stopped for the night, you thought, "I didn't make that 400 miles; Today ws a complete waste."

This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

10. You have just finished nine holes of golf. Totaling your score, you recall that although you got a par on seven holes, you got two over par on the last two holes. You think to yourself, "Today I really played poorly." This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

11. You went fishing for the first time today with some of your friends who love fishing. Nobody got anything, and the group seemed to be discouraged. You thought to yourself on the way home, "I guess I made too much noise or did something that scared the fish off." This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

12. Your friends are all going out to ride their snowmobiles. Last time you went you ran out of gas, and you think to yourself, "What if I run out of gas again; I'll freeze to death." This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

13. You have three children who generally do quite well in school. One of your children came home today and told you that he had to stay after school because he got into a fight. You think to yourself, "He wouldn't have gotten that detention if I disciplined him more."

This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

14. You are taking your coffee break when your boss stops by and reminds you of some work that has to get done today. You think to yourself, "If I don't start getting back to work earlier, I'm going to lose this job."

This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

15. You have noticed that many of your friends have begun playing tennis and are now urging you to play too. You had taken golf lessons with your spouse last year and had difficulty learning to play golf. You think to yourself, "I had so much trouble learning golf, I doubt if I could learn tennis."

This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

16. Your seven-year-old son normally does very well in school. Last week, he brought home a paper which he had done incorrectly and was supposed to do over. You think to yourself, "Oh no, now he's having trouble in school. I better make an appointment with his teacher."

This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

17. Earlier today, your spouse asked to have a serious talk with you after work about some things that were troublesome at home. You had no idea what's going on and you think, "We don't communicate enough; Our marriage is going to fall apart."

This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

18. On your last job, you had not received a raise even though a co-worker with similar experience had. You are now up for a raise in your present job and think, "I didn't get a raise the last time and I probably won't now."

This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

19. Your teenage daughter has just asked if two of her friends can stay overnight. You recall that you got very upset when your son had some friends over for pizza several weeks ago and they had made a lot of noise. You think, "If they come over, I'll get upset again."

This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

20. You run a day care center. Today, the mother of a child you have been having difficulty with calls and notifies you that she has quit work and will be withdrawing her child from your program. You think, "She probably thinks I wasn't handling him as well as I should."

This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

21. You took your children to the neighborhood pool for the afternoon. Although your kids urged you to swim with them, you were enjoying laying in the sun. Later you look up and see them arguing over a float. You think to yourself, If I had gone in the water, they probably wouldn't be fighting now."

This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

22. You went shopping for some new clothes today and were unable to find anything you liked. You think, "What a waste of a day."

This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

23. You met with your boss today to discuss how you have been doing on your job. He said that he really thought you were doing a good job, but asked you to try to improve in one small area. You think to yourself, "He really thinks I'm doing a lousy job."

This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

24. Last time you went skiing you took a hard fall and got shook up. You're supposed to go skiing this weekend but think, "I'll probably fall and break my leg and there will be no one to help me."

This thought is:

almost exactly like I would think	a lot like I would think	somewhat like I would think	a little like I would think	not at all like I would think

C.

CEQ Scoring Key

Catastrophizing:	Items	2	7	12	14	17	24
Overgeneralization:	Items	4	5	8	15	18	19
Personalization:	Items	1	6	11	13	20	21
Selective Abstraction:	Items	3	9	10	16	22	23